# U.S. POLYMERIC

## HITCO MATERIALS DIVISION



(NASA-CR-179418) FINGERPRINT TEST DATA BEPORT: FN 5055E ICT NC. 2 (ETTCC) 213 p CSCL 11E N89-13611

Unclas G3/27 0140167

FM 5055B LOT #2

D-09274

FINGERPRINT TEST DATA REPORT

NAS8-36298

COPY # 9

### TABLE OF CONTENTS

#### FILLER TESTING

### NAS8-36298

## U.S. Polymeric O.E. 71108

## Filler Lot for NASA Lot# 2

TEST		PA	<u> 401</u>	
1221	Carbon Content		1	
1.	Carbon Content		1	
2.	Ash Content	• •	•	
з.	Atomic Absorption	• •	•	
За.	Moisture Content	• •		
Зь.	Ash Content	• •	1	
4.	рн	• •	1	
5.	Particle Size, S.E.M. procedure	• •	1	
6a.	TGA, •C at 50% Loss	• •	1	
6b.	TGA	• •	2	
7.	Particle Size Distribution		2	
7. 7a.	Particle Size, Horiba	• • •	2	
	<u>CHARTS</u>			
		6/		60
TGA.		7/		7C
Part	icle Size Distribution			



### FILLER TESTING

#### NAS8-36298

## U.S. POLYMERIC D.E. 71108

## Filler Lot for NASA Lot# 2

FITTEL	LOC TOL KILDI. HE TELE	
1. Carbon Content, % QAI-5560	SAMPLE #2A-1 #2A-2 #2A-3 99.31 99.18 99.40 NASA LOT# 2 AVERAGE 99.30	
2. Ash Content, % PTM-71B	0.0 0.0 0.0 0.0 0.0 0.0 AVG. 0.0 0.0 0.0 NASA LOT# 2 AVERAGE 0.0	
3. Atomic Absorption, ppm CTM-53B (Values are average of 2 determinations)	#2A-1 #2A-2 #2A-3  Na 7.0 7.5 9.0  K 1.5 1.0 2.5  Ca 2.5 1.5 2.0  Hg 0.0 0.0 0.0  L1 0.0 9.0  TOTAL 11.0 10.0 13.5	LOT#2 AVG. 7.8 1.7 2.0 0.0 0.0
3a. Moisture Content, % CTM-53B	.041 .034 .039 .031 .020 .045 AVG036 .027 .042 NASA LOT# 2 AVERAGE .035	
3b. Ash Content, % CTM-53B	0.005 0.000 0.015 0.000 0.025 0.000 AVG. 0.003 0.013 0.008 NASA LOT# 2 AVERAGE 0.008	
4. pH, Units ASTH D1512	4.60 4.40 4.50 4.60 4.60 4.70 AVG. 4.60 4.50 4.60 NASA LOT# 2 AVERAGE 4.57	
5. Particle Size, microns S.E.M. procedure (Average values are of 20 determinations)	AVG56 .57 .52  Maximum .90 1.25 1.17  Minimum .23 .20 .25  Std. Dev .22 .28 .24  NASA LOT# 2 AVERAGE SIZE .55	
6a. TGA, °C at 50% Loss CTM-51	842 850 857 NASA LOT# 2 AVERAGE 850	



CTM-51

## Filler Lot for NASA Lot# 2

6b. TGA CTM-51 See Charts 6A-6C

7. Particle Size Distribution CTH-72

See Charts 7A-7C

7a. Particle Size, microns CTM-72

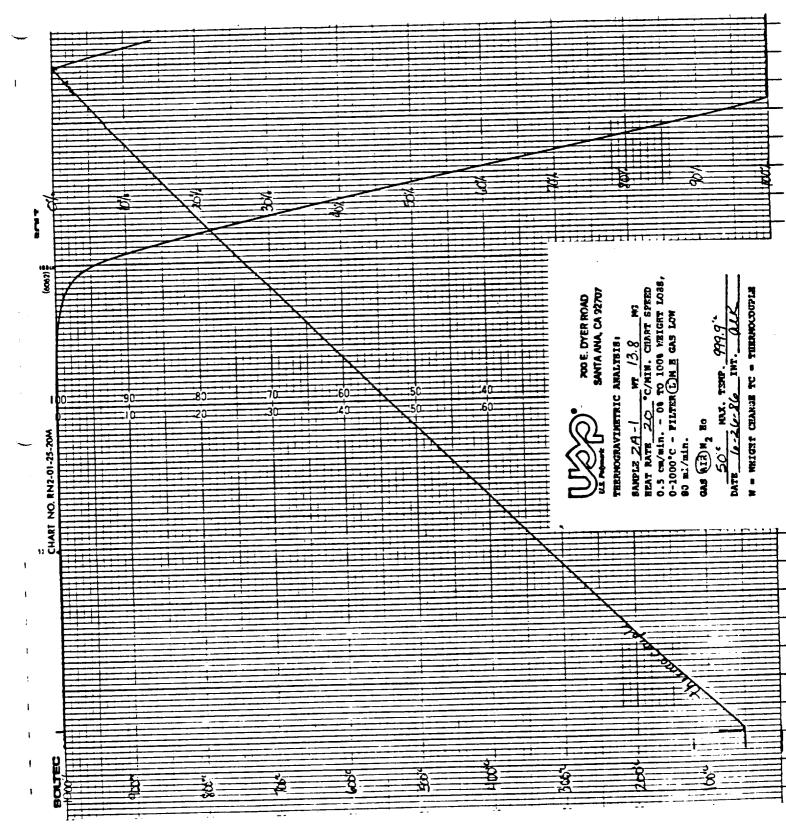
#2A-1 .86	#2A-2 .97	#2A-3
. 85	1.08	<u>. 92</u>
AVG86	1.02	. 94
W. 101	2 AVERAGE	. 94

U.S. Polymeric

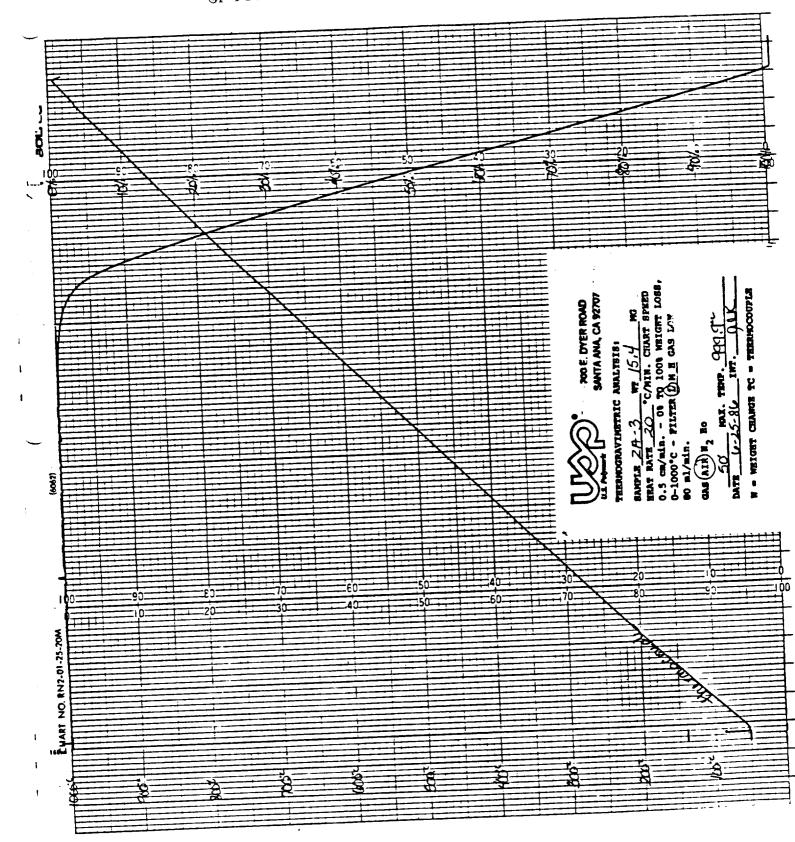
Hamil M. Ommet.

Hamid M. Quraishi, Manager Quality Assurance Department

ORIGINAL PAGE IS OF POOR QUALITY



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ORIGINAL PAGE IS OF POOR QUALITY	CHART 7A
* DISTRIBUTION TRBLE (RY VOL.)  D(PM) F(2) P(2)  5.88 ( P.P. P.P.)  5.88 4.58 - 4.8 P.P.  4.88 - 3.58 P.P.  3.58 - 3.8 P.P.  2.58 - 2.58 P.P.  2.58 - 2.58 P.P.  1.88 - 1.58 P.P.  1.88 - 1.58 P.P.  1.98 - 8.58 P.P.  1.98 - 8.58 P.P.  D(AVE) P.P.  P(P)  * DISTRIBUTION GRAPH (BY VOL.)  B.P.  TARESTER PRODUCTORS P.P.  TARESTER P.P.  TARESTER PRODUCTORS P.P.  TARESTER PRODUCTORS P.P.  TARESTER PRODUCTORS P.P.  TARESTER P.P.	Service Services Serv
HORIBA CAPA-SAP  PARTICLE ANALYZEF  SOLVENT ECHYLLOLYCOL  COOL MAN  SOLV. VISC 19.90(F)  SOLV. VISC 19.90(F)  SOLV. DENS 1.11(6/CC)  SAMP. DENS 1.96(6/CC)  DOMIN) 6.81(F)  DOMIN) 6.81(F)  SPEED 5888. (FP)  SPEED 5888. (FP)  CHIME 8 H 11 MIN 31 SEC	TINE ABSORBANCE  8.8 6.5 1.6
* DISTRIBUTION TABLE (BY VOL.)  5.88-4.58	5.88 F(2) 4.58 F(2) 4.58 F(2) 5.88 F(2) 6.58 F
HORIER CREA-SEE  PRETICLE RHALVZEL  DRIE5_2_ALBb  SAME NASA LOTHERAP-  SOLVENT ELYPL-CAYCOL  C O.O. maj mo.  SOLV.VISC 19.98(E)	# DATA TIME ABSOPBANCE 0.6 6.5 1.6

				O	RIG	IN	AL	PA	Œ	LS												C	:HA	RT	7B		
$\hat{\boldsymbol{z}}$				O	P.	OC	R (	QU.	LU	ΓY						7:)		3					-				
10A A01 3	( <b>3</b> )	9. 6	₩7 127	4.5	7.3	6,	7	21.6	32.2	53.5	86.4	166.6	(AB )	(11) 00-1		P# (BV V(		ď									
¥ TABL	F(2)	œ.	₩,	 B.	2.8	2.6	5.7	6.1	11.2	21.2	33.8	13.6				88 E8	1		-				_	7.4	2		
* DISTRIBUTION TABLE (BY VOL.)	D(PH)	5.88 (	5.88-4.59	4.58-4.88	4.88-3.58	3,58-3,88	3.88-2.58	2.58-2.88	2.88-1.58	1.58-1.88	1.88-8.58	0.58-6.88	(3110)4	/ JAUAC /		* DISTRIBUTION GRAPH (BY UCL.)	1	(41)	24.			0000	ac a	LOT#342	Sanfre ?		
BA CAPH-SAC	PARTICLE ANALYZEF	C-21/01	DATE OF THE	SAMPLE NASA LOL RESELS	SOLVENT CLEES SCIENCES	L= 0.01 mg/mx	ONS	SOLV.VISC 19.98(CP)	SOLV.DENS 1.11(6/CC)	SAMP.DENS 1.98(6/CC)	DOMEX) 5.8 (PM)	D(MIN) 8.81(FF)	D(D1V) 8.58(PK)		SPEED 5000. (RPM)		0 H 11 MIN 31 SEC			ABSORBANCE	8.5 1.8						The second secon
HORIER	PAPTIC			£		7	* CONDITIONS	0,	O,	•	_						* 11ME		* DATA	TIME	æ	<u>.1</u> -	<del></del>	<u>.i</u> i			
* DISTRIBUTION TABLE (BY VOL.)	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	(5)4	5.88 ( 8.8	5.88-4.56 5.7	4,50-4,86 2.2	7.5		e (	2.58-2.88 6.7	2.88-1.36 14.5	1.58-1.88	8° 60	2.5d-6.5d 10.5	D(AVE) 6.97 (FM)		( JOA NOT DESCRIPTION OF THE PROPERTY OF THE P	CIPAL MAN TO THE PROPERTY OF T	D(PM) F(2)	5.88			200		276.7	( 1 po 10)		
995-9997 991900	- 4		DATE 524-66-	H SAMPLE NASA LOTATARA		12001 ms/m2	* CONDITIONS *	(4) 99 (9) UTCL (4) 99 (F)							SPEED SBBB. (PPM)		# TIME P H 11 MIN 31 SEC		◆ DATE	TIME ABSORBANCE	B. P. S.		 1			·	Commence of the control of the contr

#### ORIGINAL PACE IS QUALITY \* DISTRIBUTION GRAPH (BY VOL.) \* DISTRIBUTION TABLE (BY VOL.) 25.7 189.B 18.8 84.1 43.4 1:1 8.92 (PR) F(%) Lot# 28-3 15.9 17.8 46.7 F(%) 0.50-0.80 D(AVE) .88-8.58 2.88-1.58 1.58-1.88 2.58-2.88 4.88-3.58 3.58-3.88 3.88-2.58 1.58-4.88 5.88-4.58 5.88 < D(PH) SAMPLE NASA LOTAGAT-3 SOLVENT ETHYL, GLYCOL 1.11(6/00) 1,99(6/00) 5888. (RPM) DATE STABLE 6.58(FB) 0 H 11 MIN 31 SEC 5,8 (FR) 8.81(PM) SOLV.VISC 19.98(CP) C=0,01 my ms **ABSORBANCE** HORIBA CAPA-588 PARTICLE ANALYZEF SOLV.DENS SAMP. DENS D(MAX) D(HIN) D(DIV) SPEED \* CONDITIONS TIME \* 11ME \* DATA \* DISTRIBUTION GRAPH (BY VOL.) \* DISTRIBUTION TABLE (BY VOL.) 13.2 18.8 26.3 46.2 8.95 (FR) £(%) LoT#2A-3 8.58-8.89 16.6 £(:) 1 pt y fres 1.88-8.58 1.58-1.88 D(AVE) 1.08-3.58 3,58-3,00 3.88-2.59 2.58-2.88 2,08-1,58 1.58-4.88 5,88-4,59 5.88 ( D(PR) D(PM) SOLVENT ETHELL GLYCOL SAMPLE NASA LOCKERA-3 1.11(6/CC) 1,99(6/10) 6.58(PE) 5988. (PPM) DATE 524-86 8.81(FE) 5.8 (M) (43)86.61 35IV.VISC 9 H 11 MIN 31 SEC ARSOPBANCE C=0.01 majour HORIBE CAPA-SAR PARTICLE ANALYZEF SOLU, DENS SAMP. DENS D(MRX) D(MIN) D(DIV) SPEED \* CONDITIONS

\* DATA

TIME

TIME

#

## TABLE OF CONTENTS

### RESIN TESTING

### NAS8-36298

## U.S. Polymeric O.E. 71108

## 91LD Resin Lot for NASA Lot# 2

PAGE

TEST				
1.	Resin Solids	. 1		
2.	Specific Gravity			
з.	Proceeded Viscosity		•	
4.	Col Time.		•	
5.	Atomic Absorption	. 1		
6.	Gno Chromatography	• •		
7.	TCA	• •	L	
8.	DSC	•		
9.	HPLC	•		
10.	GPC	•	1 2	
11.	рн	•	_	
12.	Phenol Content	• •	2	
13.	Chang's Index	• •	2	
14.	RDS	• •	2	
15.	NMR	• •	2	
	<u>CHARTS</u>			
		64	_	60
Gas	Chromatography	7A		
TGA.				BC
DSC.		_		90
HPLC				100
GPC.				140
RDS.				15
NMD				



#### RESIN TESTING

#### NAS8-36298

## U.S. Polymeric O.E. 71108

## 91LD Resin Lot for NASA Lot# 2

<u>=</u>	
1. Resin Solids, % PTM-7C	#2-1 70.8 70.4 70.8 70.2 71.9 72.0 70.5 71.1
AVG.	71.2 70.9 71.1 Lot# 2 AVERAGE 71.1
2. Specific Gravity @ 25°C PTM-29C	1.141 1.140 1.139 Lot# 2 AVERAGE 1.140
3. Viscosity, Brookfield, cps. @ 22.8°C PTM-14C	1250 1250 1500 Lot# 2 AVERAGE 1333
4. Gel Time, min:sec PTM-47B	3:30 3:38 3:34 Lot# 2 AVERAGE 3:34
5. Atomic Absorption, ppm #2-1 CTM-53B K 0 Ca 3	#2-2 #2-3 LOT1 AVG 4 8 5.3 0 0 0.0 2 2 2.3
Ca 3 Mg 1 Li <u>0</u> AVG. 8	1 1 1.0 1 0 0.3 1 9.0
6. Volatiles, Gas Chromatography CTM-55	See Charts 6A-6C
7. TGA, % Weight Loss at 500°C CTM-51 (AIR)	#2-1 #2-2 #2-3 39.5 40.1 39.4 Lot# 2 AVERAGE 39.7
	See Chart 7A-7C
8. DSC, temperature • C CTM-50A	183 191 183 Lot# 2 AVERAGE 186
	See Chart 8A-8C
9. HPLC CTM-49A	See Chart 9A-9C
10. GPC, Average molecular wt. CTM-49A	1718 1801 1598 Lot# 2 AVERAGE 1706
	See Chart 10A-10C

## 91LD Resin Lot for NASA Lot# 2

11.	pH, units CTM-1B		#2-1 8.5 Lot# 2		#2-3 8.4 8.4
12.	Phenol Content, % CTM-55 Appendix 1	AVG.	10.04 9.83 9.94 Lot# 2	11.09 10.80 10.94 AVERAGE	11.74 11.88 11.81 10.90
13.	Chang's Index, ml. CTM-5B		24.2 Lot# 2	24.8 AVERAGE	25. 2 24. 7
14.	RDS, Minimum Viscosity, cps. CTM-57A	#2-1 #2-2 <u>#2-3</u> AVG.	Min. Vis 278 249 239 255	<u>.                                    </u>	• <u>C</u> 107 111 113 110

See Charts 14A-14C

See Charts 15A-15C

15. NMR Vendor procedure

U. S. Polymeric

Hamid M. Ouraishi, Manager Quality Assurance Department

# TYPICAL GAS CHROMATOGRAPH SET-UP

Operator Q. 9. 3. Column Length Gt. Dia. 114 Liquid Phase AT-1000 Wt. 5. Support GRAPHIAC	Bate 12/10/86 Betector FID Voltage Sensit. Flow Rates, ml/min Mydrogen 60 Air 46 Scavenge
Mesh BOLLO Carrier Gas HP Rotameter Inlet Press DO psig Rate DO mi/min CHART SPEED SAMPLE 9110,2-1 Size D. 1	Split Temperature, C Bet. 220 inj. 200 Column Initial Final 210 Rate 50/MIN Solvent THE Concn. 0.10/781

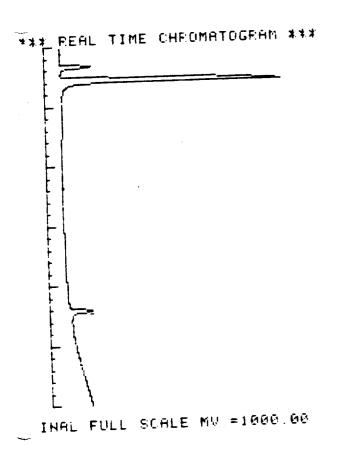
# GAS CHROMATOGRAPHY STANDARD SOLVENT

TEST METHOD CTM-55

STANDARD SOLVENT/MONOMER	RETENTION TIME (MINS.)
MEOH ETHANOL MECL2 ACETONE IPA THF ACETONITRILE CRESOL MEK FURFURAL TOLUENE CHLOROBENZENE	.6 1.18 1.28 1.45 1.83 3.08 3.2 4.03 4.08 15.03 17.98 19.6 22.08
PHENOL	22100

NOTE: THE WAS USED TO DILUTE THE RESIN SAMPLES.

### WERTICAL SCALE FACTOR 17



SAMPLE 91 LD 2-1 MISC. C=0.1017616MS/ML

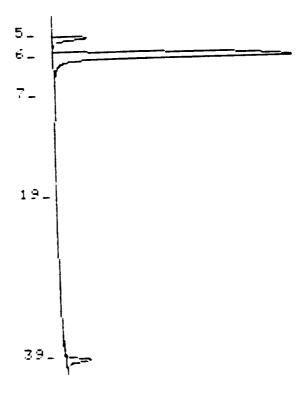
TIME: 11:49 DATE 12/10/86 OPERATOR: JGZ

RUN TIME: 30.00 MINUTES DELAY TIME: 0.00

CHAN: 0

PK	RET	PEAK	AREA E	
NO.	TIME	AREA	% L	
356799 139	.65 1.70 3.05 5.55 11.90 22.05	1789 204140 2010900 1537 2214 162080	.075 2 8.568 2 84.397 3 .065 2 .093 2	2 11953 84306 4 127 2 96

TOTAL AREA= 2382661 THRESHOLD= 1 MIN PR WIDTH= 15 AREA REJECT= 1000



SAMPLE: 91 LD 2-1 MISC. : C=0.101781 GHS/NL

TIME: 11:49 DATE: 12/10/86 OPERATOR: JGZ

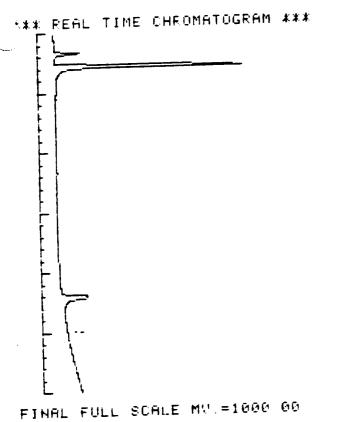
RUN TIME: 30,00 MINUTES DELAY TIME: 0,00

CHAN: 0

PK RET	PEAK AREA	AREA B	PEAN HT.
5 1.70	204140	8.588 2	11953
6 3.05	2010900	84.594 3	84306
39 22.05	162080	6.818 1	8700

TOTAL AREA = 2377120 THRESHOLD= 1 MIN PK.WIDTH= AREA REJECT= 2300







-SAMPLE: 91 LD 2-2 MISC.: 0=0.10137 GAS/ML

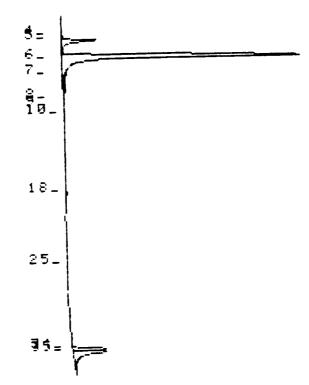
TIME: 16:17 DATE: 12/10/86 OPERATOR: UGZ

RUN TIME: 30.00 MINUTES DELAY TIME: 0.00

CHAN: 0

PK	RET	PEAK	AREA B	PEAK
NO.	TIME	AREA		HT.
245678988545	6830355385538557495 11623566574985 11622	1634 1854 135890 1192800 41333 5852 9425 9398 10601 1194 104460 197270	095 3 108 2 7 939 2 69 685 4 3415 4 551 4 549 4 619 1 6 103 3 11 525 3	146 207 10181 72100 585 354 249 187 6015 9916

TOTAL AREA = 1711710 - THRESHOLD= 1 MIN PL WIDTH= 15 AREA REJECT= 1000



SAMPLE: 91 LD 2-2 MISC.: 0=0.10137 GHS/ML

TIME: 16:17 DATE: 12/10/66 OPERATOR: JGZ

RUN TIME: 30.00 MINUTES DELAY TIME: 0.00

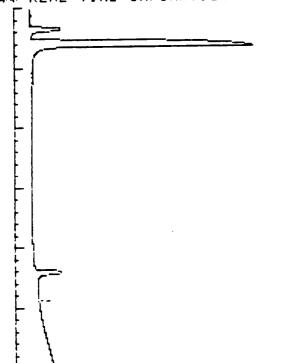
CHAN: 0

PK	RET	PEAK	AREA		PEAK
Nû.	TIME	AREA	%		HT.
7 34	1.70 2.93 3.95 21.98 22.15	135890 1192800 41333 104460 197270	8,129 71,350 2,472 6,249 11,800	342	10181 72100 585 10015 9916

TOTAL AREA= 1671753 THRESHOLD= 1 MIN.PK.WIDTH= AREA REJECT= 11000

# OF POOR QUALITY,





FINAL FULL SCALE MV. = 1000.00

SHAMPLE: 91 LD 2-3 MISC. 0=0.10126 CHS/ML

TIME: 16:58 DATE: 12/10/86 OPERATOR: JGZ

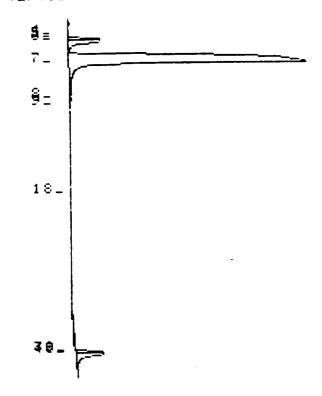
RUN TIME: 30.00 MINUTES

DELAY TIME: 0.00 CHAN: 0

PK	RET	PEAK	AREA	£	PEAK
NO	TIME	AREA	%		HT.
01 04567000	.63 1.45 1.69 1.83 3.28 5.60 6.03 11.83	4204 1258 81250 196320 2899700 2293 1464 6140	.123 .037 2.382 5.753 84.980 .067 .043	B00005445	435 129 11465 11447 85372 251 69 248
39	22.03	54263	1.590	2	9873
40	22.15	165300	4.844		9807

TOTAL AREA= 3412211 THRESHOLD= 1 \_MIN\_PK.NIDTH= 15 AREA REJECT= 1000

#### VERTICAL SCALE FACTOR: 1%



SAMPLE: 91 LD 2-3 MISC. C=0.10126 G45/ML

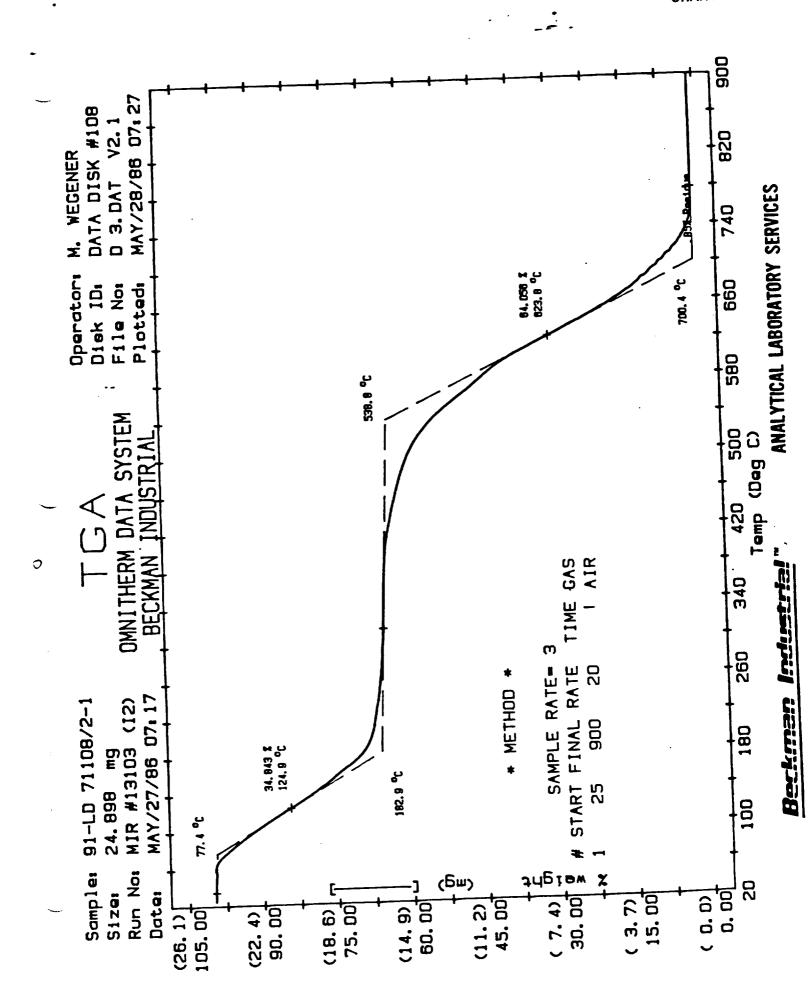
TIME: 16:58 DATE: 12/10/86 OPERATOR: UGZ

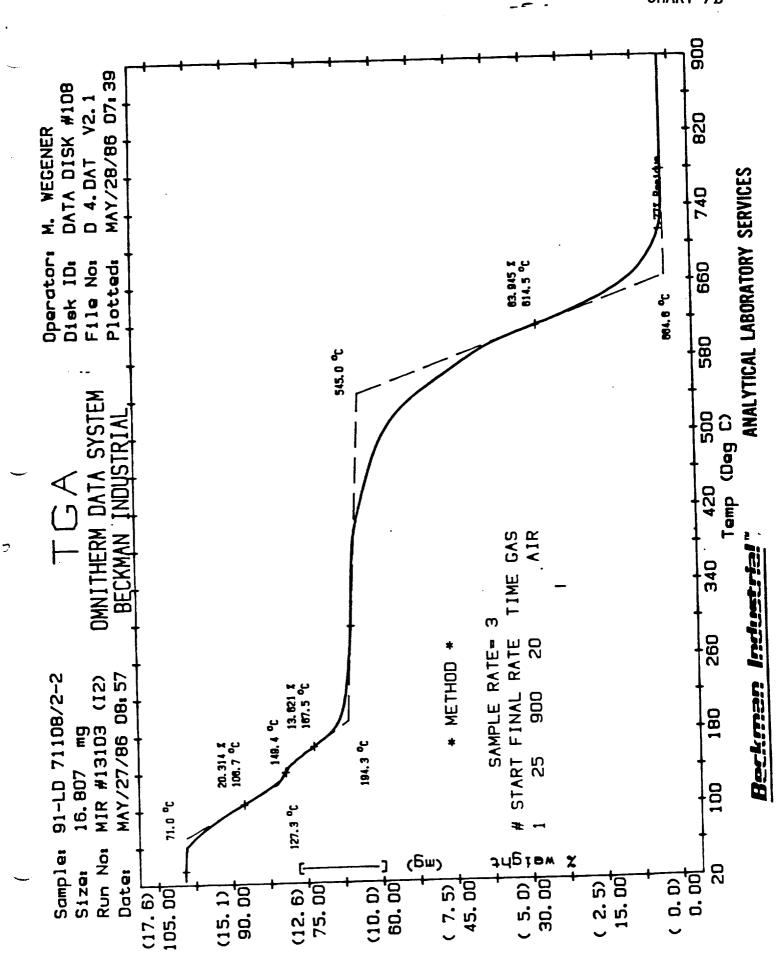
RUN TIME: 30.00 MINUTES DELAY TIME: 0.00

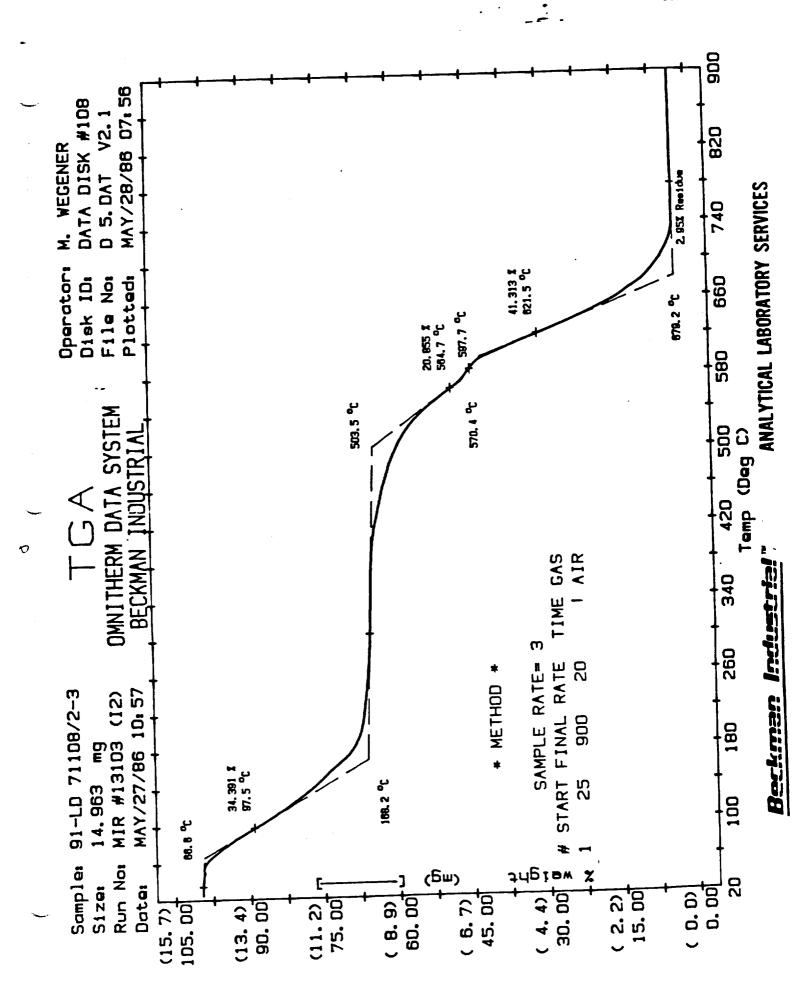
CHAN 0

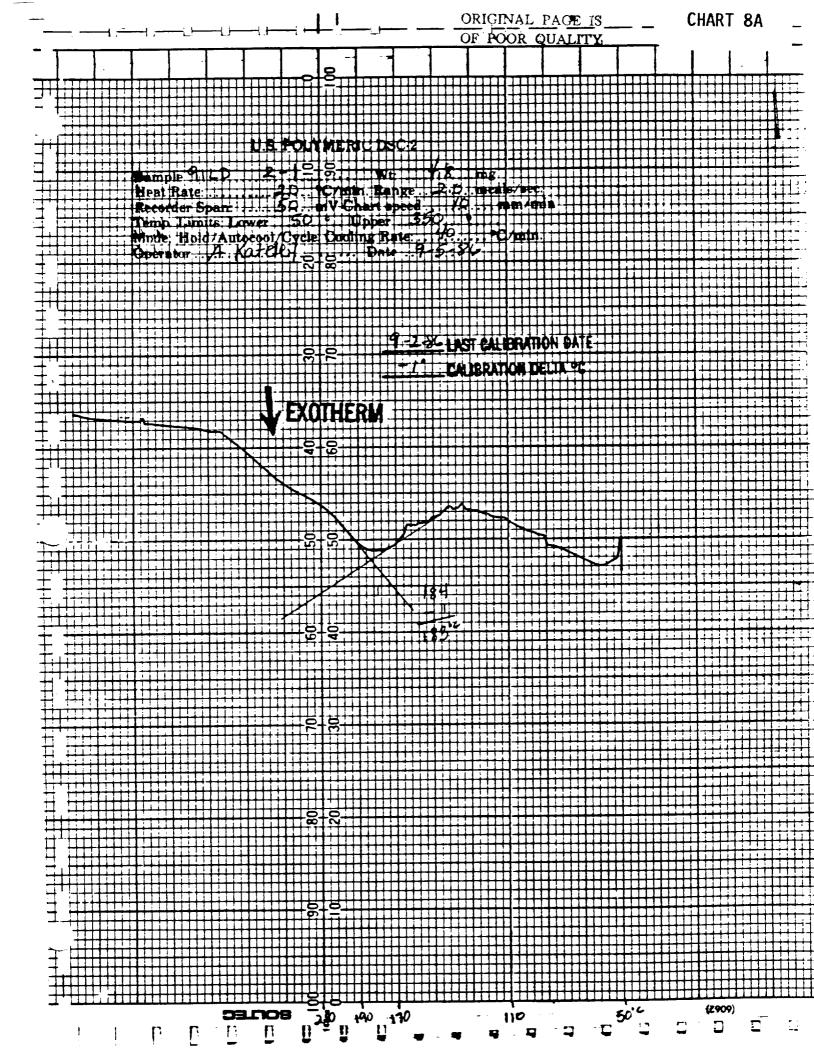
PK	RET	PEAK	AREA	_	PEAK
NO.	TIME	AREA	%		HT.
6 7 39	1.68 1.83 3.28 22.03 22.15	81270 196320 2899700 54263 165300	2:393 5:779 85:364 1:597 4:866	233	11465 11447 85372 9873 9807

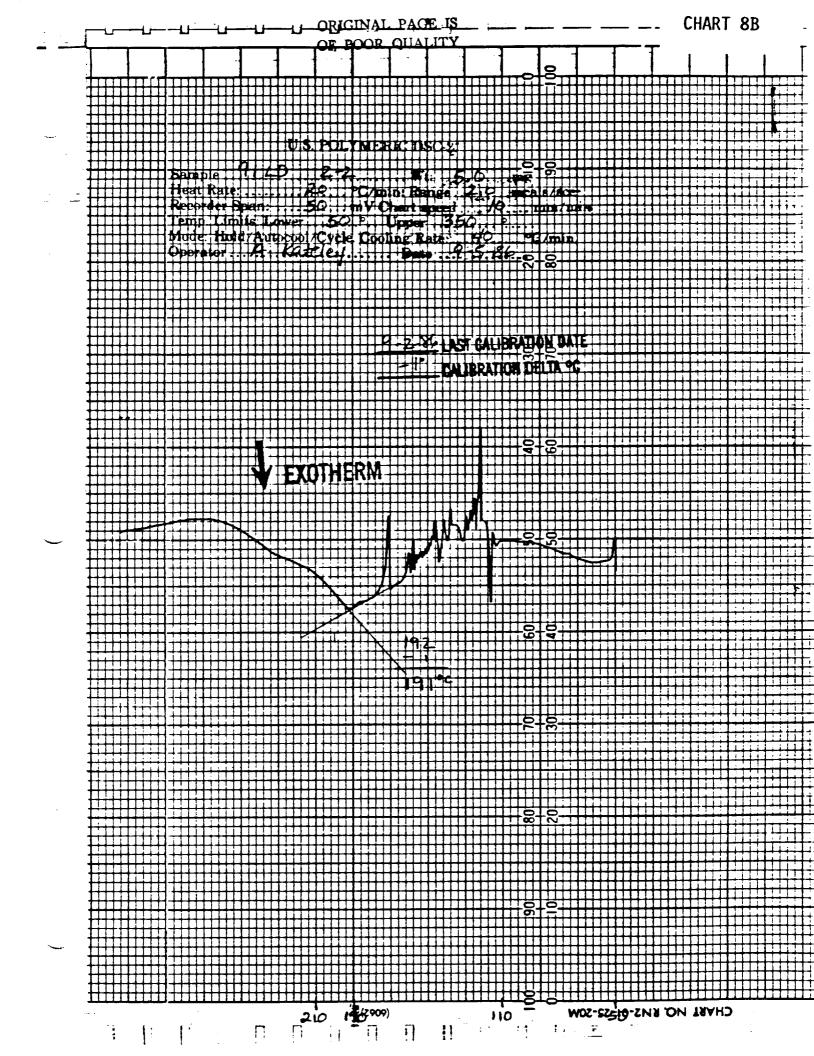
TOTAL AREA= 3396853 THRESHOLD= 1 MIN.PK.WIDTH= 15 AREA REJECT= 6200

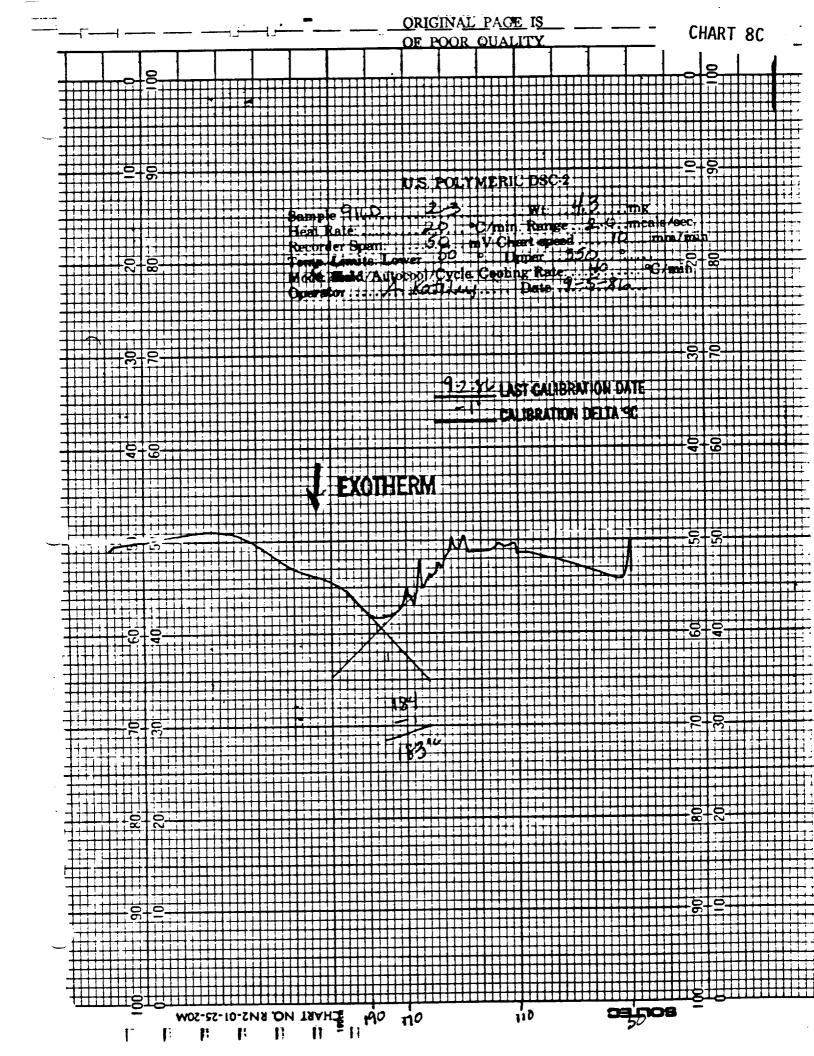












37 FILE A: PHENO39. HDR TAKEN 09-05-1986 16:56:50

#### \*\*\*\*\*\* AREA PERCENT REPORT \*\*\*\*\*\* Sample Name: 91LD,2-1,C=6.85 DATA FILE: A: FHENO39. PTS Tite: 09-05-1986 16:56:50 Method:PHENDLIC Channel#: O Vial#: N.A. Cycle#: 39 : iterface: 4 Starting Peak Width: 10 Threshold: .01 Column Type: MICROBONDAFAK C-18 nstrument Type: BECKMAN HPLC Solvent Description: THF/WATER, 2:1 BY WEIGHT Operating Conditions: R.T., FLOWRATE=1.5 ML/MIN Detector 1: Detector 0: 220NM/.5AU Ending Retention Time: 10.00 torting Delay: 0.00 Area B Peak Normalized Area/ Peak Height Ret % % L Ht. Area Time D. 120482 75.1672 2 5050 100.000 23.9 39804 24.8328 2 4045 33.037 9.8 1.78 4 2.05 To al Area: 160286 Area Reject: 1000 Dne sample per 1.000 sec.

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\_\_al Area:

#### \*\*\*\*\*\* AREA PERCENT REPORT \*\*\*\*\*\* Operator Initials: JGZ ← Sample Name: 91LD,2-2,C=6.77 Date: 09-05-1986 16:40:05 Method: PHENDLIC DATA FILE: A: PHEND38. PTS Channel#: O Vial#: N.A. Cycle#: 38 + nterface: 4 t starting Peak Width: 10 Threshold: .01 Column Type: MICROBONDAFAK C-18 Instrument Type: BECKMAN HPLC Solvent Description: THF/WATER, 2:1 BY WEIGHT Operating Conditions: R.T., FLOWRATE=1.5 ML/MIN Detector 1: Detector 0: 220NM/.5AU Misc. Information: LENGTH=25 Ending Retention Time: 10.00 Starting Delay: 0.00 Normalized Area/ Area B Peak Feak <u>ڪل </u> Ret Height % Area Ht. % L Time No. \$ 1.7B 121012 74.9964 2 5109 100.000 23.7 4 2.05 40345 25.0036 2 4092 33.340 9.9 4 2.05

161357 Area Reject: 1000 One sample per 1.000 sec.

5.320 MV. HIGH SCALE 10.656 MV. 10.00 MIN. LOW SCALE-

ror 67 opening raw data file A:LASTRUN.FTS ror 53 creating file A: PHEND40. PTS at line 4620 FILE A: PHEN037.HDR TAKEN 09-05-1986 16:04:07

c\_al Area:

#### \*\*\*\*\*\* AREA PERCENT REPORT \*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*\* Sample Name: 91LD,2-3,C=6.79 DATA FILE: A: PHEND37.FTS late: 09-05-1986 16:04:07 Method:FHENDLIC Channel#: O Vial#: N.A. Cycle#: 37 . iterface: 4 Threshold: .01 Column Type: MICROBONDAFAK C-18 Instrument Type: BECKMAN HPLC Solvent Description: THF/WATER, 2:1 BY WEIGHT Operating Conditions: R.T., FLOWRATE=1.5 ML/MIN Detector 1: Detector 0: 220NM/.5AU \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* t rting Delay: 0.00 Normalized Area/ Area B Peak Peak Height 'ka Ret % L Ht. Area Time 100.000 23.9 5098 121706 75.2396 2 32.909 9.8 1.78 40052 24.7604 2 4076 3 2.05 161758 Area Reject: 1000 Dne sample per 1.000 sec.

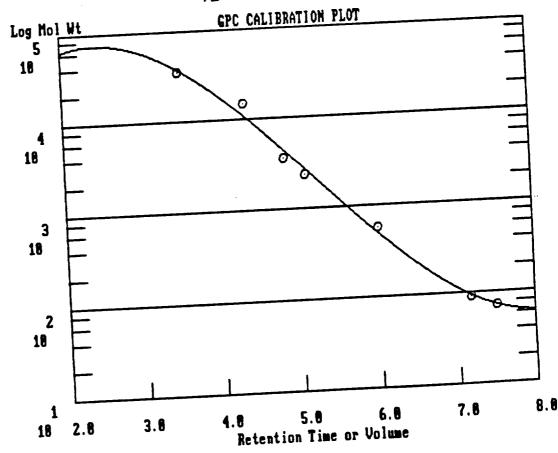
DATA FILE∞PHEN037 FROM 0.00 MIN. TO 81 LJ, 2-3, C-6.78 MG/ML. 8/5/88. JGZ

10.00 MIN. LOW SCALE-

5.424 MV. HIGH SCALE- 10.752 MV.

\*\*\* Calibration Data \*\*\*
Calibration Name:
Misc Information:

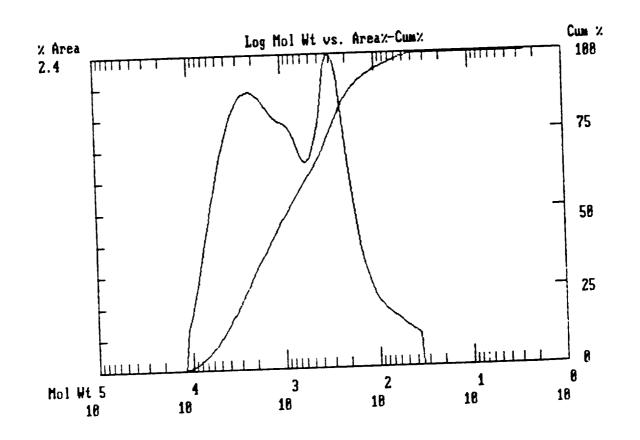
Fit Type: 3 Log Mol Wt = A	+ Bx + Cx^2 + Dx^3 B= 2.115815 C=5646824	D= 3.606432E-02
A= 2.538977 Coefficient of	Determination: 0.9902 Molecular Weight	Log Mal Wt
Ret Time		4.544
	35000	4.176
3.50	15000	
4.33	3600	3.556
4.83	2350	3.371
		2.756
5.09	570	1.964
6.00	92	1.857
7.17	72	1.657
7.50	CDC CALIER	ATION PLOT



A FILE B:GFC28 .HDR TAKEN 08-05-1986 17:13:56

# \*\*\*\*\*\* GPC REPORT \*\*\*\*\*

Operator Initials: GBF ← Sample Name: 91LD 2-1 =2.68 DATA FILE: B:GFC2B .FT5 ate: 08-05-1986 14:05:42 Method: Vial#: N.A. Channel#: 0 Cycle#: 28 nterface: 5 Threshold: 0 \* Starting Peak Width: 60 Column Type: ULTRASTYRAGEL 500A Instrument Type: HPLC/BECKMAN Solvent Description: THF Operating Conditions: T=35C FLOWRATE=2.OML/MIN Detector 1: Detector 0: 254NM/.1AU Misc. Information: CALIBRATION/GFC Ending Retention Time: 10.00 0.00 Sourting Delay: C. ibration file: GPCPHEN Molecular Weight Distribution Averages 22295 to 10.00 MW: B-seline TIMES: 3.85 to Pocess JIMES: 3.85 to 22295 to 10.00 MW: P ocess JIMES: 196902 Tutal Area: 1718 Mw= 370 M = 4.6439 M /Mn= 4134 Mz =1501



A 4 FILE B:GFC22 .HDR TAKEN 08-05-1986 17:18:27

1801

4.B945

368

4352

1573

c al Area:

1w=

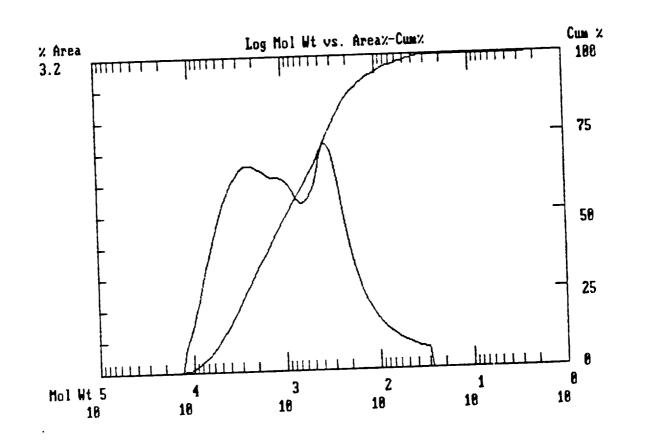
4n =

1z -

1/=

14 Mn=

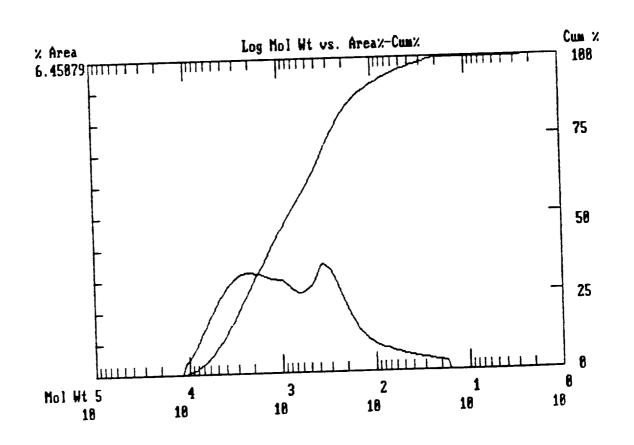
#### \*\*\*\*\*\* GPC REPORT \*\*\*\*\*\* Operator Initials: GBF Sample Name: 91LD 2-2 C=2.68 DATA FILE: B:GPC22 .FTS Date: 08-05-1986 11:58:33 Method: Channel#: O Vial#: N.A. Cycle#: 22 nterface: 5 Threshold: 0 Column Type: ULTRASTYRAGEL 500A Instrument Type: HPLC/BECKMAN Solvent Description: THF Operating Conditions: T=35C FLOWRATE=2.0ML/MIN Detector 1: Detector 0: 254NM/.1AU Misc. Information: CALIBRATION/GFC Ending Retention Time: 10.00 starting Delay: 0.00 la ibration file: GPCPHEN lo\_ecular Weight Distribution Averages 22295 to 3.85 to 10.00 MW: Baseline TIMES: 22295 to MW: 10.00 3.85 to r cess TIMES: 240471

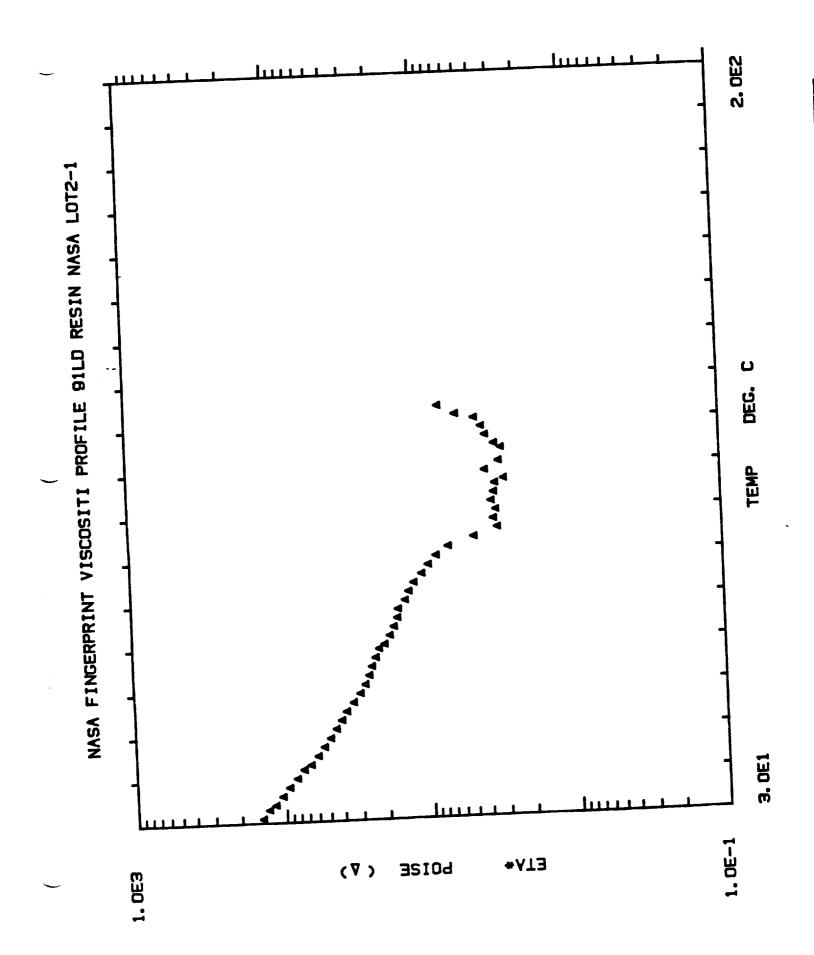


#### ORIGINAL PACE IS OF POOR QUALITY

### \*\*\*\*\*\*\* GPC REPORT \*\*\*\*\*

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7-9 表示意识表示的意识表示的意识的现在分词形式的现在分词形式的现在分词
                                          Operator Initials: GBF
 Jample Name: 91LD 2-3 C=2.68
                                          DATA FILE: A: GPC20.FTS
 Date: 08-05-1986 11:28:37 Method:GFC
                                                       Vial#: N.A.
                                          Channel#: 0
                         Cycle#: 20
 interface: 5
                         Threshold: .01
**<del>*******************************</del>
                                     Column Type: ULTRASTYRAGEL 500A
  Instrument Type: HPLC/BECKMAN
            Solvent Description: THF
   Operating Conditions: T=35C FLOWRATE=2.OML/MIN
                                      Detector 1:
           Detector 0: 254NM/.1AU
     Misc. Information: CALIBRATION/GFC
Ending Retention Time:
               0.00
Starting Delay:
Calibration file: GFCFHEN
My ecular Weight Distribution Averages
                        10.00 MW:
                                        22295 to
Baseline TIMES:
                3.85 to
                                        22295 to
                                MW:
                3.85 to
                         10.00
Process TIMES:
                271362
Trial Area:
                 1598
ML. =
                  260
Mn=
                6.1449
Mi /Mn=
                  3922
M: =
                  1389
Mv=
```





periment No.: 12 Sample No. : 1

FINGERPRINT VISCOSITI PROFILE 91LD RESIN NASA LOT2-1

e ator :CP =====

erating Mode: DYNAMIC

e p Type : CURE

ometry: DISH & PLATE

25.00 RADIUE : 0.50 GAP

ot 🗷 : TRHIN =50% REDUENCY = 10RAD/SEC

> ORIGINAL PAGE IS OF POOR QUALITY

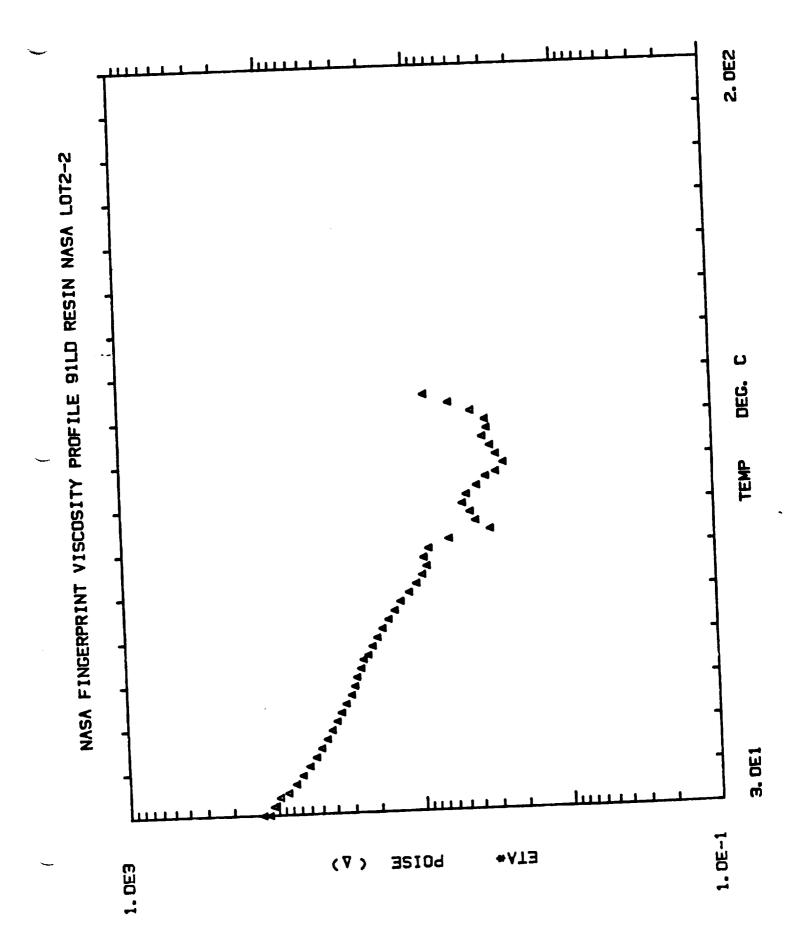
-NO	ETA*	ETA'	ETA"	- TORQUE	TIME	TEMP "
_ND	POISE	POISE	POISE	GRAMS-CM	<sub>≠5</sub> MIN <del>5</del> 9	=∴ - <del>-</del> DEG. €
		1.350e+002		1.777e+001	2.000e-001	3.100e+001_
		1.355e+002		1.778e+001	1,000e+000	3.100e+001 =
2	1.414e+002	_1.335e+002 _4. <b>22</b> 6e+002	4.031E+001	7.770e-001	2.000=4000	
- ∑ <del>- ∞</del>	1.278e+002-	1.2262+002	3, 27≥51001 3, 27≥51001			-3-400p+001
4.	1.151e+002	1.095e+002	6.30/etvul		4.000@+000	3.400e+001
<b>5</b>	1.031e+002	9-673e+001	-5.559e+001	~~.2756~001		-3-800e+001-
6 -	-9.226e+001-	-8.526e+001		1.159e+001		4.000E+001
7	8.141e+001	7.379e+001	3.440e±001	-1-022e+001-		
<sup>:::</sup> 8	7.292e+001	6.490e+001	_3_325e+001 -	9.160e+000		4.200e+001
9	6.498e+001	-5.671e+001-	3.471e+001	_8.155e+000	B.000e+000_	4.300e+001
~ 10	5.801e+001	4.953e+001	3.019e+001	<b>7.285e+</b> 000	9.000e+000	4.5002+001
11	5.231e+001	-4.338e+001 5	2.924e+001	6-563e+000	1.000e+001	4.700e+001
12	4.729e+001	_3.E33e+001-	_2.769e+001	-5.937 <del>e+</del> 000	1.100e+001	4.900e+001
13	4.300e+001	3.379e+001	2.660e+001	5.400e+000	1.200e+001	5.100e+001
14	3.949e+001	3.012e+001		4.956e+000	-1.300e+001	5.300e+001
	3.635e+001	2.747e+001	2.380e+001	4.558e+000	1.400e+ <u>0</u> 01	5.500e+001 =
15		2.431e+001	The second secon	4.067e+000	1.500e+001	5.700e+001
16	3.243e+001		7.705e+001	3.353e+000	1.600e+001	5.900e+001
- 17	2.909e+001	<del>-</del>	-1-685e+001		700e+001	6.100e+001
18	2.683e+001		1.535e+001	3.149e+000	1.B00e+001	6.300e+001
19	2.510e+001			3 007e+000-	_1900e+Q01-	_6,500e+001
_ 20		1.965e+001_		2.B23e+000		- 6.700e+001 ····
	250e+001		1.223e+001_	2.662e+000		6.900e+001
	122e+001	1.834e+001	_1.068e+001	2.440e+000	2.200e+001	7.000e+001
	747e+001	1.717e+001	9.163e+000	2.440e+000	2.300e+001	7.200e+001
	95e+001	1.615e+001	7.604e+000	2.092e+000	2.400e+001	7.400e+001
	\7e+00i	1.540e+001	6.3B1e+000			7.600e+001
	9e+001	1.464e+001	5.652e+000	1.969e+000	2.600e+001	7.800e+001—
	%e+001	_ 1.467e+001		1.93Be+000	2.700e+001	8.000e+001 <u>-</u>
	=+001	1.324e+001	3.880e+000	1.733e+000	2.800e+001	B.200e+001
·~	>+001	1.257e+001	~~3.245e+000	1.629e+000		8.400e+001
	+001	1.1646+001	2.60Be+000	1.496e+000	2.900e+001	
	-001	1,027 <u>e</u> +001	_2.330e+000.	_1.323e+000		8.800e+001
3	000	9.231e+000	1.976e+000	1.185e+000	3.100e+001	
3.	100	B.201e+000	1.393e+000	1.045e+000	3.200e+001	9.000e+001
<u>3</u> 4	ŌĊ	6.757e+000	1.215e+000	8.615e-001	3.300e+001	
35	vo.	4.478e+000	_9.663e-001	- 5.754e-001	3.400E+001	7,400e+001
36	Ş		4.576e-001	3.961e-001	3.500e+001	9.600e+001_
37		3.331e+000	2.837e-001	4.197e-001	3.600e+001	9.800e+001
38		3.145e+000	5.852e-001	4.013e-001	3.700e+001	
39		3.414e+000	3.017e-001	~ 4.302e-001	3.800e+001	
		3-221e+000	-6.07ie-001	-4.112e-001		1.040e+002
40		3.170e+000		-4.014e-001	. 4.000e+001	1.060e+002
41		2.734e+000		3.493e-001	_4.100e±001	1.070e+002
42		707 <u>e+000</u>		4.687e-001		1.090e+002.
43		966e+000		3.758e-001	_	1.110e+002
- 44		8366+000		3.593e-001	4.400e+001	1.140e+002
45		061e+000			4.500e+001	1.150e+002
4 <i>ć</i>						
47		46e+000				1.190e+002
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45		2e+000			4.900e+00	
50	5.749e	5e+000				
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+ LINDERLYIN! ATPROPRIATE AIED		
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	and the state of t			
		= 05:01 IF	TIME	TEMF -
ETA	ETA' ETA" POISE			DEG. C
		GRAMS-LM		1 240e+002
Puise	= 707-4000 J-925e+000	9.483e-001	2,0006+001	
1 7.552e+000	1. 2026+000 - 43 /255			··



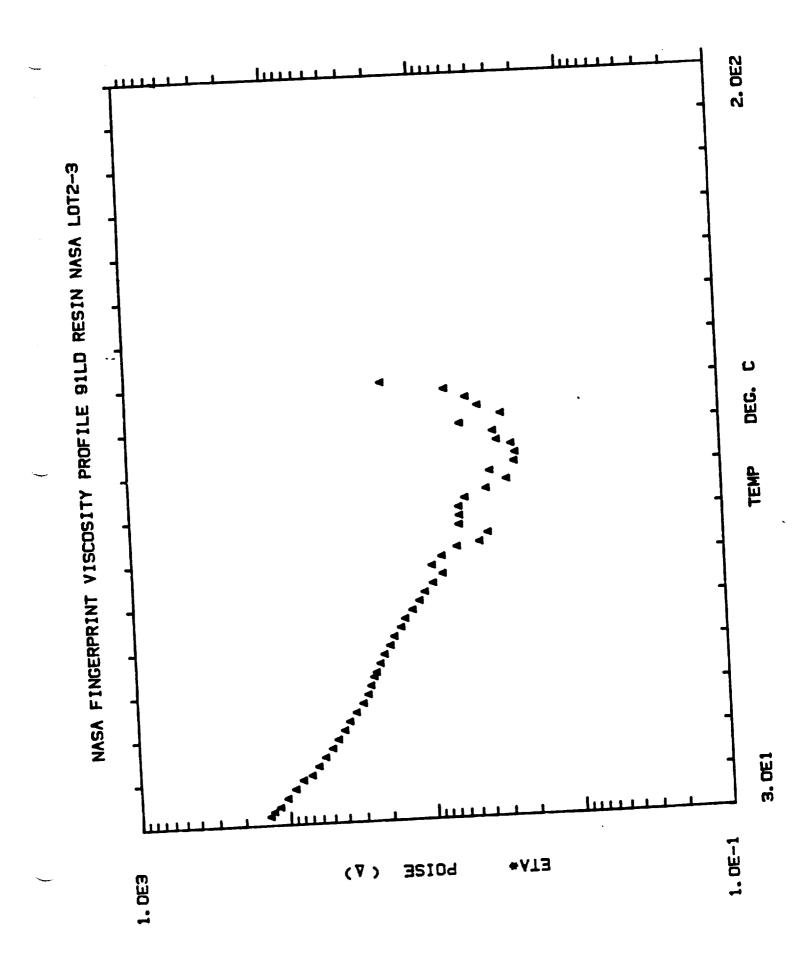
D' 95 : THAIN =50% REDUENDY =10RAD/SEC

FTA	TIME
POISE	TORUUE CONTRACTOR OF TAX
1.1242=1002	POISE BRAMS-CM
1.124e+002	PUISE 2.0002 4 916e+001 1.563e+001 2.000E-001
1.050e+002 9,702e+001 4.005e+001 1.319e+001 3.000e+000 3.000e+001 4.006e+001 1.047e+001 3.000e+000 3.000e+001 4.006e+001 1.047e+001 3.000e+000 3.000e+001 4.006e+001 3.73e+001 7.435e+001 3.73e+001 7.435e+001 3.73e+001 7.435e+001 3.73e+001 7.73e+001 3.73e+001 3.359e+001 7.73e+001 3.75e+001 3.359e+001 7.73e+001 3.75e+001 3.359e+001 7.73e+001 3.00e+001 3.75e+001 3.359e+001 7.73e+001 3.00e+001 3.75e+001 3.75	1 1.245E 374 - 1 000 A 176e+001 1.415e+001
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7 - 6.571e+001	- 8 日 ママフニュ()() /。40JETVV - 2007 - 100 -
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1. 4. 070e+001 2. 954e+001 2. 685e+001 4. 710e+000 1. 200e+001 5. 30ae+001 1. 3.753e+001 2. 437e+001 2. 437e+001 2. 437e+001 3. 404e+001 1. 500e+001 5. 500e+001 1. 2. 957e+001 2. 080e+001 2. 105e+001 3. 711e+000 1. 500e+001 5. 700e+001 1. 2. 957e+001 2. 080e+001 2. 105e+001 3. 711e+000 1. 500e+001 5. 700e+001 1. 2. 957e+001 1. 956e+001 1. 956e+001 3. 711e+000 1. 500e+001 5. 700e+001 1. 2. 957e+001 1. 956e+001 1. 956e+001 3. 711e+000 1. 500e+001 5. 700e+001 1. 2. 957e+001 1. 956e+001 1. 956e+001 3. 3.757e+000 1. 500e+001 6. 100e+001 1. 2. 957e+001 1. 956e+001 1. 95	1
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1 2.517e+001 1.841e+001 1.551e+001 2.603e+000 2.000e+001 6.600e+001 2.2035e+001 1.751e+001 1.7132e+001 2.613e+000 2.100e+001 7.000e+001 2.613e+000 1.751e+001 1.751e+001 9.773e±000 2.210e+000 7.200e+001 7.200e+	18 2.691e+001 1.488e+001 1.481e+001 3 157e+000 1.800e+001 36.300e+001
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2	71 7.235e+001 1.801e+001
24         1.769e+001         1.571e+001         8.139e+000         2.220e+000         2.300e+001         7.400e+001         8.00e+001         8.00e+001 <t< td=""><td>7 2.085e+001 1.751e+001 1.133e+001 7.416e+000 2.200e+001 7.000e+001</td></t<>	7 2.085e+001 1.751e+001 1.133e+001 7.416e+000 2.200e+001 7.000e+001
24         1.769e+001         1.571e+001         2.137e+000         2.400e+001         7.400e+001         7.400e+001         7.400e+001         7.400e+001         7.400e+001         7.400e+001         7.400e+001         7.400e+001         7.600e+001         8.00e+001	5 -4 926e+001 -1.660e+001 9.775e+001 7.200e+001 7.200e+001
1.601e+001 1.331e+001 5.670e+000 1.654e+000 2.500e+001 7.600e+001 1.019e+001 1.019e+001 9.500e+000 3.451e+000 1.277e+000 3.451e+000 3.200e+001 8.600e+001 8.600e+001 3.451e+000 3.451e+000 3.200e+001 9.000e+001	24 1.769e+001 1.571e+001 8.137e+000 2.011e+000 -2.400e+001 7.400e+001
1.447e+001 1.31e+001 5.67be+000	25 1.601e+001 1.445e+001 2.700 1 81Ae+000 2.500e+001 7.600e 9
1.317e+001   1.218e+001   3.989e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.674e+000   3.000e+001   3.0	1.447e+001 1.331e+001 5.670e+000 1.554e+000 -2.600e+001 7.800e+001
1.150e+001	2/ 1.317e+001 1.218e+001 5.024e+000 1.035e+000 2.700e+001 B.000e+001
1.019e+001         9.500e+000         3.674e+000         3.674e+000         3.451e+000         3.451e+000         3.000e+001         8.400e+001         9.200e+001         9.200e+	29 1 150e+001 1.079e+001 3.989e+000 1.077e+000 2.800e+001 B.200e+001
31         8.597e+000         8.600e+000         2.847e+000         3.000e+001         8.600e+001         9.000e+001	1.019e+001 9.500e+000 3.674e+000 1.163e+000 2.900e+001 8.400e+001
31       8.597e+000       8.114e+000       2.847e+000       3.100e+001       8.800e+001       9.000e+001        9.000e+001	- 9 244e+000 8.600e+000 3.451e+000 3.000e+001 B.600e+001
9.007e+000         8.514e+000         2.737e+000         3.200e+001         9.000e+001           1.291e+000         7.955e+000         2.335e+000         7.517e-001         3.300e+001         9.200e+001           3.4 5.792e+000         5.936e+000         7.474e-001         3.400e+001         9.400e+001         9.400e+001           3.5 143e+000         3.053e+000         7.474e-001         3.946e-001         3.400e+001         9.600e+001           3.7 42e+000         3.852e+000         8.381e-001         4.945e-001         3.500e+001         9.600e+001           3.815e+000         4.758e+000         4.758e+000         7.412e-001         3.574e-001         3.800e+001         1.000e+002           4.444e+000         4.444e+000         3.739e+000         3.739e+001         4.780e-001         3.900e+001         1.040e+002           4.3 292e+000         3.202e+000         3.202e+000         3.22e-001         4.131e-001         4.000e+001         1.070e+002           2.810e+000         2.773e+000         3.422e-001         3.120e-001         4.200e+001         1.090e+002           4.2787e+000         2.995e+000         3.422e-001         3.495e-001         4.300e+001         1.110e+002           4.3 175e+000         3.128e+000         3.40e+001         3.9	11 8 557e+000 B.114e+000 2.847e+000 1.70e+000 -3.100e+001 8.800e+001
2.291e+000       7.955e+000       2.335e+000       3.300e+001       3.300e+001       9.200e+001         34       5.972e+000       5.835e+000       1.361e+000       3.946e+001       3.400e+001       9.400e+001       )         35       3.143e+000       3.053e+000       3.946e+001       3.500e+001       9.600e+001       )         3.942e+000       3.852e+000       3.852e+000       4.946e+001       3.500e+001       9.800e+001       9.800e+001         3.942e+000       4.758e+000       4.758e+000       5.374e+001       3.800e+001       1.020e+002         3.810e+000       4.444e+000       4.444e+000       4.640e+001       3.900e+001       1.020e+002         4.3292e+000       3.739e+000       7.517e+001       3.900e+001       1.020e+002         4.846e+001       3.292e+000       3.202e+000       7.622e+001       4.780e+001       1.070e+002         2.810e+000       2.773e+000       3.422e+001       3.120e+001       4.200e+001       1.070e+002         4.2787e+000       2.785e+000       3.421e+001       3.811e+001       4.300e+001       1.10e+002         4.342e+000       3.377e+000       3.377e+000       3.982e+001       4.500e+001       1.170e+002         3.242e+000       3.214e+000	- > 9 007e+000 B.514e+000 2.937e+000 3.200e+001 9.000e+001
34       5.972e+000       5.835e+000       1.381e+001       3.400e+001       7.400e+001       7.400e+002       7.412e-001       7.400e+001       7.400e+002       7.412e-001       7.400e+001       7.400e+001       7.400e+002       7.412e-001       7.400e+001       7.400e+001       7.400e+002       7.412e-001       7.400e+001       7.400e+001       7.400e+002       7.400e+001       7.400e+002       7.400e+002       7.400e+002       7.400e+002       7.400e+001       7.400e+002	- P 291e+000 7.955e+000 2.335e+000 7.517e-001 3.300e+001 9.200e+001
35       3.143e+000       3.053e+000       7.474e-001       3.500e+001       9.600e+001         3.942e+000       3.852e+000       8.381e-001       4.745e-001       3.600e+001       9.800e+001         3.742e+000       4.281e+000       4.123e+000       1.152e+000       3.700e+001       3.600e+001       9.800e+001         3.742e+000       4.758e+000       4.758e+000       7.412e-001       3.800e+001       1.020e+002         4.494e+000       4.444e+000       6.690e-001       3.800e+001       1.040e+002         3.810e+000       3.739e+000       7.308e-001       4.780e-001       3.900e+001       1.040e+002         4.132e+000       3.202e+000       3.202e+001       4.544e+001       3.524e-001       4.000e+001       1.070e+002         3.487e+000       2.773e+000       3.422e-001       3.120e+001       4.200e+001       1.10e+002         4.278e+000       3.037e+000       3.77e+000       3.811e-001       4.400e+001       1.150e+002         3.421e+000       3.128e+000       5.464e-001       3.982e-001       4.500e+001       1.170e+002         4.242e+000       3.214e+000       4.294e-001       4.069e-001       4.800e+001       1.210e+002         4.047e+000       3.913e+000       1.030e+000	78 5 0978+000 5.836e+000 1.361e+000 7.400e+001 7.400e+001
3.942e+000 3.852e+000 4.123e+000 1.152e+000 5.374e-001 3.600e+001 5.800e+001 5.374e-001 3.600e+001 1.000e+002 5.442e-001 3.800e+001 1.020e+002 5.442e-001 3.800e+001 1.020e+002 5.442e-001 3.800e+001 1.020e+002 5.442e-001 3.900e+001 1.040e+002 5.478e-001 3.900e+001 1.040e+002 5.487e+000 2.773e+000 2.762e-001 3.524e-001 3.524e-001 3.00e+001 1.070e+002 5.2487e+000 2.755e+000 3.422e-001 3.425e-001 4.200e+001 1.070e+002 5.058e-001 3.425e-001 4.200e+001 1.10e+002 5.058e-001 3.425e-001 4.200e+001 1.10e+002 5.058e-001 3.425e-001 4.200e+001 1.150e+002 5.058e-001 4.289e-001 4.500e+001 1.150e+002 5.477e-001 3.982e-001 4.600e+001 1.170e+002 5.477e-001 3.982e-001 4.600e+001 1.170e+002 5.477e-001 3.982e-001 4.600e+001 1.170e+002 5.477e-001 3.982e-001 4.600e+001 1.170e+002 5.477e-001 3.982e-001 4.600e+001 1.190e+002 5.069e-001 4.069e-001 1.230e+002 5.069e-001 4.900e+001 1.230e+002	75 7 1439+000 3.053e+000 7.494e-001 4.046-001 3.500e+001 9.600e+001
37       4.281e+000       4.123e+000       1.152e+000       3.700e+001       1.000e+002         38       4.815e+000       4.758e+000       7.412e-001       6.039e-001       3.800e+001       1.020e+002         3       4.494e+000       4.444e+000       6.690e-001       5.640e-001       3.900e+001       1.040e+002         3       810e+000       3.739e+000       7.522e-001       4.780e-001       4.000e+001       1.070e+002         41       3.292e+000       3.202e+000       7.622e-001       4.131e-001       4.100e+001       1.070e+002         2       2.810e+000       2.773e+000       3.422e-001       3.120e-001       4.200e+001       1.10e+002         44       2.787e+000       2.755e+000       3.422e-001       3.495e-001       4.300e+001       1.110e+002         45       3.037e+000       2.975e+000       5.464e-001       3.811e-001+4.400e+001       1.150e+002         5       3.421e+000       3.128e+000       5.464e-001       4.289e-001       4.500e+001       1.170e+002         45       3.242e+000       3.128e+000       5.464e-001       4.069e-001       4.700e+001       1.170e+002         45       3.242e+000       3.128e+000       5.464e-001       4.069e-001       4.800e+001<	= 045-4000 R 8529+000 B.3818-001 4.7-05 11 - 4006+001 9.8008+001
38       4.815e+000       4.444e+000       6.690e-001       5.640e-001       3.800e+001       1.040e+002         7       4.494e+000       3.739e+000       7.308e-001       4.780e-001       3.900e+001       1.040e+002         41       3.292e+000       3.202e+000       7.622e-001       4.131e-001       4.000e+001       1.070e+002         2       2.810e+000       2.773e+000       4.544e-001       3.524e-001       4.200e+001       1.090e+002         2       2.463e+000       3.422e-001       3.425e-001       3.495e-001       4.300e+001       1.110e+002         44       2.787e+000       2.995e+000       5.058e-001       3.811e-001       4.400e+001       1.130e+002         45       3.037e+000       2.995e+000       5.464e-001       4.289e-001       4.500e+001       1.170e+002         45       3.421e+000       3.128e+000       5.477e-001       3.982e-001       4.600e+001       1.170e+002         45       3.242e+000       3.214e+000       4.294e-001       4.069e-001       4.800e+001       1.210e+002         46       3.242e+000       3.913e+000       4.294e-001       4.069e-001       4.900e+001       1.230e+002	7 A 7816+000 4.123e+000 1.132e+000 3.700e+001 3.700e+001
7       4.494e+000       4.444e+000       6.690e+001       3.900e+001       1.040e+002         3.810e+000       3.739e+000       7.308e+001       4.780e+001       3.900e+001       1.040e+002         41       3.292e+000       3.202e+000       7.522e+001       4.131e+001       4.000e+001       1.070e+002         2.810e+000       2.773e+000       4.544e+001       3.524e+001       4.200e+001       1.090e+002         3.427e+000       2.755e+000       4.215e+001       3.495e+001       4.300e+001       1.110e+002         45       3.037e+000       2.995e+000       5.058e+001       3.811e+001       4.500e+001       1.150e+002         45       3.421e+000       3.377e+000       5.464e+001       4.289e+001       4.500e+001       1.170e+002         45       3.421e+000       3.128e+000       5.477e+001       3.982e+001       4.600e+001       1.190e+002         45       3.242e+000       3.214e+000       4.294e+001       4.069e+001       1.190e+002         45       3.242e+000       3.213e+000       5.477e+001       3.982e+001       4.800e+001       1.190e+002         40       4.047e+000       3.913e+000       4.175e+000       7.150e+001       4.900e+001       1.230e+002 <td>TO 11 18150+000 4.7005 000</td>	TO 11 18150+000 4.7005 000
3.810e+000 3.739e+000 7.808e-001 4.131e-001 4.000e+001 1.070e+002 3.202e+000 7.622e-001 4.131e-001 4.100e+001 1.070e+002 3.202e+000 2.773e+000 4.544e-001 3.524e-001 4.200e+001 1.090e+002 3.487e+000 2.463e+000 3.422e-001 3.120e-001 4.300e+001 1.110e+002 42.787e+000 2.755e+000 4.215e-001 3.495e-001 4.300e+001 1.130e+002 45 3.037e+000 2.995e+000 5.058e-001 3.811e-001 4.400e+001 1.150e+002 45 3.421e+000 3.377e+000 5.464e-001 4.289e-001 4.500e+001 1.170e+002 46 3.242e+000 3.128e+000 5.477e-001 3.982e-001 4.600e+001 1.190e+002 47 3.242e+000 3.214e+000 4.294e-001 4.069e-001 4.700e+001 1.190e+002 48 3.242e+000 3.913e+000 1.030e+000 5.069e-001 4.800e+001 1.210e+002 49 4.047e+000 3.913e+000 1.030e+000 5.069e-001 4.900e+001 1.230e+002	- ABA-1000 A AAAP+000 D.P70F 001 BOO-1001 1.040P*0V4
41       3.292e+000       3.202e+000       4.544e+001       3.524e+001       1.00e+001       1.090e+002         2.810e+000       2.773e+000       3.422e+001       3.120e+001       4.200e+001       1.090e+002         42.787e+000       2.755e+000       4.215e+001       3.495e+001       4.300e+001       1.110e+002         45       3.037e+000       2.995e+000       5.058e+001       3.811e+001+4.400e+001       1.150e+002         5       3.421e+000       3.77e+000       5.464e+001       4.289e+001       4.500e+001       1.170e+002         7       3.175e+000       3.128e+000       5.477e+001       3.982e+001       4.700e+001       1.190e+002         45       3.242e+000       3.214e+000       5.477e+001       3.982e+001       4.500e+001       1.190e+002         45       3.242e+000       3.128e+000       5.477e+001       4.069e+001       1.210e+002         45       3.242e+000       3.913e+000       5.069e+001       4.900e+001       1.230e+002	3 810e+000 3.739e+000 7.308e-001 - 171e-001 - 4.000e+001 - 1.060e+002 -
2.810e+000 2.75e+000 3.422e-001 3.120e-001 4.200e+001 1.110e+002 4.2787e+000 2.755e+000 4.215e-001 3.475e-001 4.300e+001 1.130e+002 4.215e-001 3.611e-001 4.400e+001 1.130e+002 5.058e-001 3.421e+000 3.377e+000 5.464e-001 4.289e-001 4.500e+001 1.170e+002 5.477e-001 3.175e+000 3.128e+000 5.477e-001 3.982e-001 4.600e+001 1.190e+002 4.294e-001 4.069e-001 4.700e+001 1.190e+002 4.047e+000 3.913e+000 1.030e+000 5.069e-001 4.900e+001 1.210e+002 5.069e-001 4.900e+001 1.230e+002	
2.467e+000 2.463e+000 4.215e-001 3.475e-001 4.300e+001 1.110e+002 44 2.787e+000 2.755e+000 4.215e-001 3.811e-001-4.400e+001 1.130e+002 45 3.037e+000 2.975e+000 5.05Be-001 4.289e-001 4.500e+001 1.150e+002 5.464e-001 4.289e-001 4.600e+001 1.170e+002 7.175e+000 3.12Be+000 5.477e-001 3.982e-001 4.700e+001 1.190e+002 48 3.242e+000 3.214e+000 4.294e-001 4.069e-001 4.700e+001 1.210e+002 9 4.047e+000 3.913e+000 1.250e+000 7.150e-001 4.900e+001 1.230e+002	5 0100+000 2.773e+000 4.544e-001 3.324 001 4.700e+001 1.090e+002
44 2.787e+000 2.733e+000 5.058e-001 3.811e-001 4.400e+001 1.130e+002 45 3.037e+000 2.995e+000 5.058e-001 4.289e-001 4.500e+001 1.150e+002 5 3.421e+000 3.377e+000 5.464e-001 3.982e-001 4.600e+001 1.170e+002 5 3.175e+000 3.128e+000 5.477e-001 3.982e-001 4.700e+001 1.190e+002 45 3.242e+000 3.214e+000 4.294e-001 4.069e-001 4.700e+001 1.210e+002 5 4.047e+000 3.913e+000 1.230e+000 7.150e-001 4.900e+001 1.230e+002	
45 3.037e+000 2.773e+000 5.464e-001 4.289e-001 4.500e+001 1.170e+002 5.471e+000 3.175e+000 3.128e+000 5.477e-001 3.982e-001 4.600e+001 1.170e+002 4.242e+000 3.214e+000 4.294e-001 4.069e-001 4.700e+001 1.210e+002 5.4047e+000 3.913e+000 1.030e+000 5.069e-001 4.900e+001 1.230e+002 5.4047e+000 3.913e+000 1.230e+000 7.150e-001 4.900e+001 1.230e+002	4.400e+000 4.700e+000 1.500e+000 1.500e+0001—4.400e+001 (2.4+100e+000)
5.421e+000 3.377e+000 5.464e-001 4.267e-001 4.600e+001 1.170e+002 3.175e+000 3.128e+000 5.477e-001 3.982e-001 4.600e+001 1.190e+002 4.3175e+000 3.214e+000 4.294e-001 4.069e-001 4.700e+001 1.210e+002 4.047e+000 3.913e+000 1.030e+000 5.069e-001 4.900e+001 1.230e+002 5.067e-001 4.900e+001 1.230e+002	AS 3 0376+000 4.7306 000
7 3.175e+000 3.128e+000 5.477e-001 3.782e-001 4.700e+001 1.190e+002 48 3.242e+000 3.214e+000 4.294e-001 4.069e-001 4.800e+001 1.210e+002 5 4.047e+000 3.913e+000 1.030e+000 5.069e-001 4.900e+001 1.230e+002	3 421e+000 3.377e+000 5.464e-001 4.287e-001 4.600e+001 1.170e+002
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ETA\* ETA' ETA" TORQUE TIME TEMP

POISE POISE PRISE GRAMS-CM MIN. DEG. C

POISE POISE PRISE GRAMS-CM J. 000e+001 1\_750e+002



Rheometrics RECAP II

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p riment No.: 14 Sample No.:

FINGERPRINT VISCOSITY PROFILE 91LD RESIN NASA LOT2-3

perator : CRISTINA P

at and Time : Tuesday, August 19, 1986 - 16:16:38

perating Mode : DYNAMIC

echetry: DISK & FLATE

RADIUS ---- 25.00 - ---

0.50

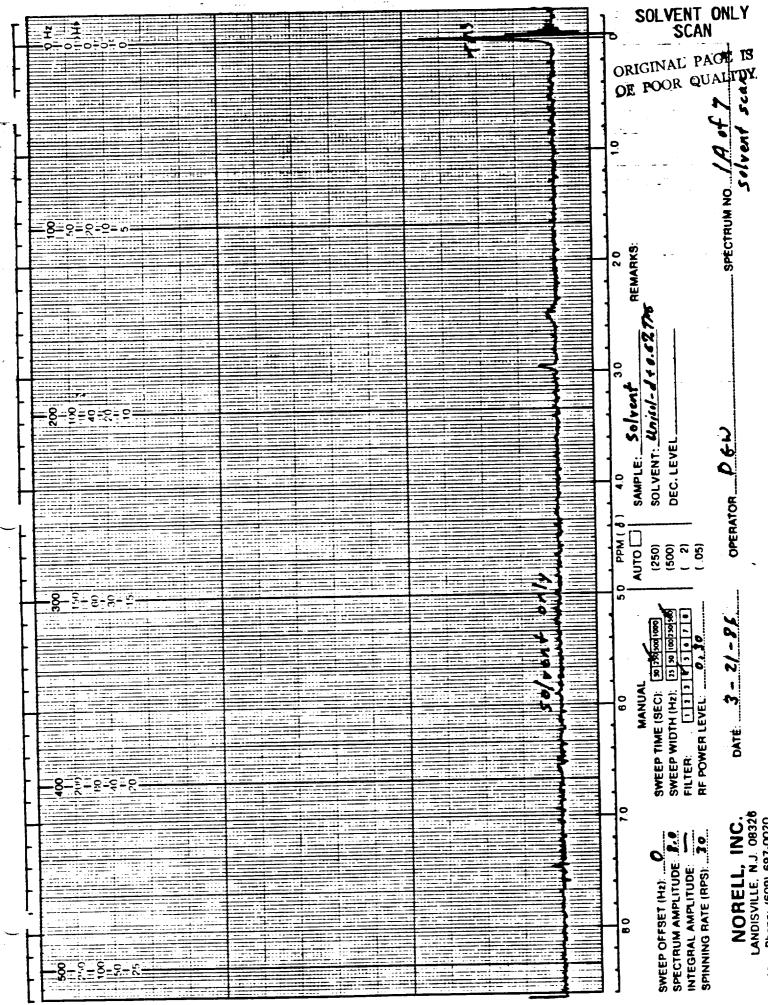
# ORIGINAL PACE IS OF POOR QUALITY NASA FINGERPRINT VISCOSITY PROFILE 91LD RESIN NASA LOT2=3

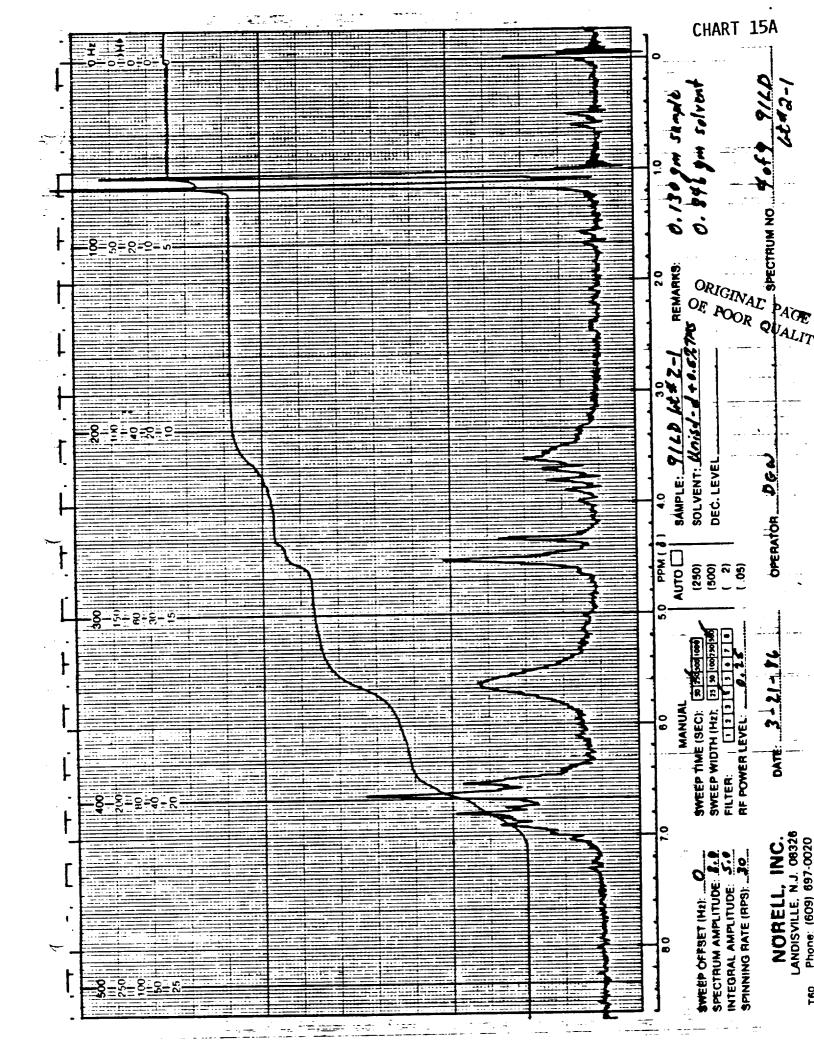
NAS	e e e	INGERPRINT V	ISCOSITY PRO	FILE FILD R	ESIN NASA LO	12-3	
	 >1 ,						
				ETA"	TOROUE	TIME	TEMP
N	٥.	ETA*	ETA'	POISE -	GRAMS-CM	_ MIN	DEG. C
		POISE	POISE	4.992e+001	1.696e+001	2.000e-001	3.200e+001=
	1	1.351e+002	1.256e+002	4.521e+001	1.686e+001	1.000e+000	3.200e+001
<u> </u>	2	1.344e+002~	1.266e+002	4.216e+001	1.591e+001	2.000e+000	3.300e+001-
	3	1.26Be+002	1.196e+002.	3.982e+001	1.446e+001	3.000e+000	3.400e+001
	4	1.152e+002	1.081e+002	3.795e+001	1.2B2e+001	4.000e+000	3.600e+001
	5	1.022e+002	9.490e+001		-1:125e+001	-5.000e+000	-3.800e+001
	6	B.971e+001	B.175e+001	3.695e+001	9.945e+000	6.000e+000	4.000e+001
	7	7.926e+001	7.087e+001	3.550e+001	8.650e+000	7.000e+000	4.100e+001
	8	6.897e+001	6.003e+001	3.397e+001	7.728e+000	B_000e+000_	4.300e+001_
	9	6.157e+001	5.200e+001	3.296e+001	6.926e+000	9,000e+000	4.500e+001
	10	5.522e+001	4.550e+001	3.128e+001	6.164e+000	1.000e+001	4.700e+001
	11	4.913e+001	3.904e+001	2.982e+001		1.100e+001	4.900e+001
	12	4.464e+001	3.427e+001	2.867e+001			5.100e+001
-	13	4.033e+001	2.964e+001	2.735E+001	4.652e+000	1.300e+001	5.300e+001
	14	3.706e+001	_2.634e+001	2.606e+001	_4.165e+000		5.500e+001
_	15	3.322e+001	2.355e+001	- 2.343e+001	- 3.718e+000	1.500e+001	5.700e+001
	16	2.965e+001	2.132e+001	2.060e+001		and the second s	5.900p+001
	17-			1_872e+001			6.100e+001
	18	2.603e+001	1.949e+001	1.726e+001	A		<b>∆.</b> 300e+001.
	19	2.466e+001	. 1.901e+001	1.570e+001	<u>.</u>		6.400e+001
	20	2.363e+001	1.883e+001	1.428e+001	· · · · · · · · · · · · · · · · · · ·		6.600e+001
	21	2.217e+001	1.829e+001	-1.254e+001			6.800e+001
	22	2.071e+001	1.778e+001	1.061e+001			7.000e+001
	23	1.881e+001	1.656e+001	B.917e+000			_7.200e+001
	24	1.760e+001	-1.597e+001	7.383e+000			
	25		1.449e+001	6.153e+000	1.976e+000		
	26	the second contract of		5.297e+000		·	
	27			- 4,304e+000			
-	28			3.442e+00			
- <del>-</del>	29			3.305e+00	1.335e+000		
				7.695e+00			
	. 30			1.948e+00		7.3.000e+001	
	31	£ 3.7.7		7.828e+00		3.100e+00	
- 	3.			I TELLO	n 1.004e+00	0 3.200e+00	****
	3		a _ Z : 079=+00	1.721e+00	0_7.8729-00	1 3,300e+00	1 - 77-2000
	7	4 · · · · · · · · · · · · · · · · · · ·	G	<del>-</del> <del></del> ·			

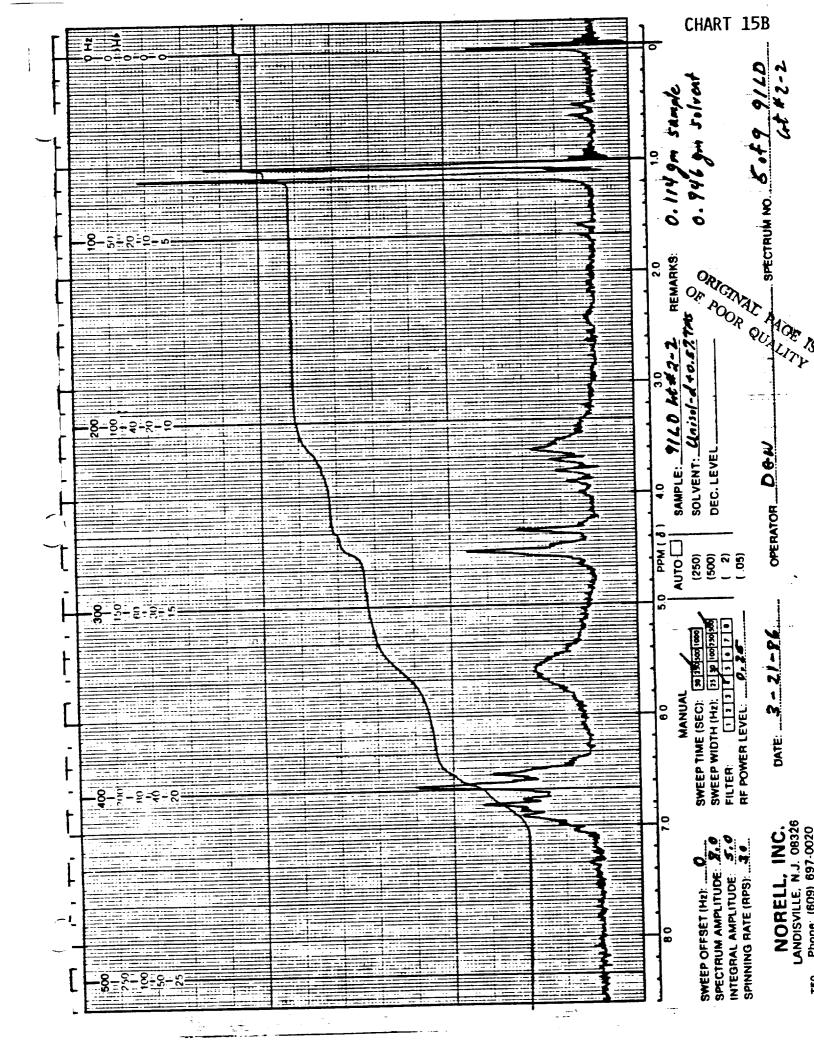
36	3.827e+000	3.777e+000	6.155e-001	-4.806e-001	3.500e+001	7.500e+001
	~ 6.006±+000°			7.535e-001	-3.600e+001	-9.700e+001
18	5.933e+000	-5.725e+000	1:560e+000	7.447e-001	3.700e+001	9.900e+001
35	-5.959e+000-	5.79Be+000	1.376e+000		3.800e+001	1.010e+002
1 30	5.391e+000 <sup>73</sup>	5.287e+000	1.057e+000	6.765e-001	3.900e+001	1,030e+002
• 11	∴3.839 <del>e+</del> 000	3.68Be+000_	1,06Be+000	4.817e-001	_4.000e+001	-1-050e+002
	-2.768e+000-	2.534e+000	1,-114e+000	3.474e-001	4.100e+001	1.070e+002
	3.582e+000_			4.476e-001	-4.200e±001	1,090e+002
	-2.437e+000					
	2.386e+000					
	2.529e+000					
	3.162e+000					
	3.335e+000					
	5.591e+000					
	2.915e+000					

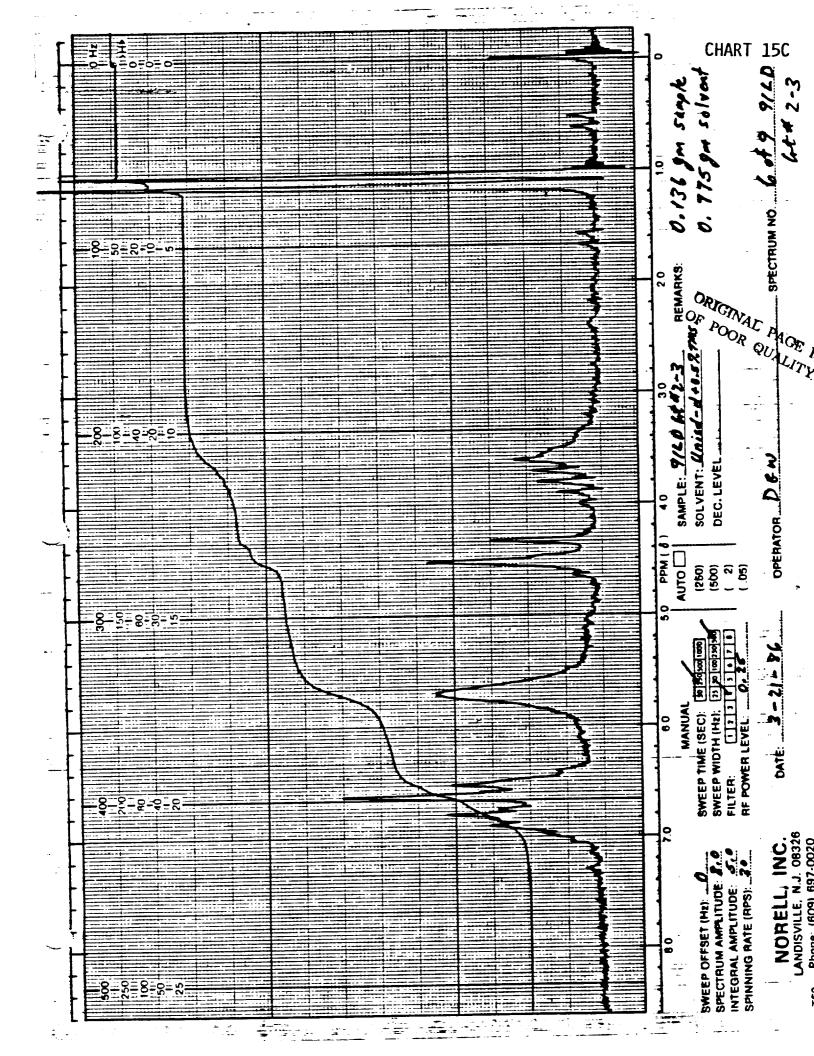
### NAJA FINGERPRINT VISCOSITY PROFILE 91LD RESIN NASA-LOT2-3-

h 1.	ETA*	ETA'	ETA"	TORQUE	TIME	TEMP
	FOISE		POISE	GRAMS-CM	MIN.	DEG. C
1	4.1B3e+000	4.073e+000	9.518e-001	5.246e-001	5.000e+001	1.240e+002
2	5.029e+000	4.881e+000	1.211e+000	6.309e-001	5.100e+001	1.260e+002
53	6.973e+000	6.753e+000	1.739e+000	8.739e-001	5.200e+001	1.280e+002
54	1.866e+001	1.754e+001	6.376e+000	2.340e+000	5.300e+001	1.300e+002









# TABLE OF CONTENTS

### FABRIC TESTING

### NAS8-36298

# U.S. Polymeric O.E. 71108

# CCA-3 Fabric for NASA Lot# 2

TEST		PA	<u> 16.</u>	
	Breaking Strength, WARP		1	
la.	Breaking Strength, WARL		1	
1b.	Breaking Strength, FILL	-	1	
2a.	Carbon Assay	•	<u>-</u>	
2b.	Hydrogen Assay	•	-	
2c.	Nitrogen Assay	• •	2	
з.	Vigual Inspection	• •	2	
4.	Specific Gravity	• •	2	
5.	pH	• •	3	
6.	TGA	• •	3	
7a.	Atomic Absorption	• •	3	
	Moisture Content	• •	4	
7b.	Ash Content	• •	4	
7c.	Filament diameter, WARP		4	
8a.	Filament diameter, WARP		4	
86.	Filament diameter, FILL	• •	- A	
9a.	Thread Count, WARP	• •	-	
9b.	Thread Count, FILL	• •	<b>-</b>	
10a.	Areal weight	• •	5	
10b.	Volatiles	• •	6	
100.	Androne Wagh		6	
100.	#EIGHT CHANGE DOWN			
	<u>CHARTS</u>			
	ial Inspection	34		35
Visu	nal Inspection	6.4	. –	61



### FABRIC TESTING

### NAS8-36298

U.S. POLYMERIC O.E. 71108

# CCA-3 Fabric for NASA Lot# 2

	<u> </u>				
	/4- WARP		#2-1 <u>5</u>	#2-1E	#2-2S
ia. Breaking Strength, 1bs	/1n, want	PICK	32	35	41
ASTH D1682			34	28	30
		CENTER		33	45
		PLAIN	31		38.7
		AVG.	32.3	32.0	JO. 7
					40.45
	#2-2E	#2-35	#2-3E	#2-4S	#2-4E
av	31	39	35	31	30
PICK		41	33	32	2 <del>9</del>
CENTER	28		<u>36</u>	<u>32</u>	<u>33</u>
PLAIN	<u>33</u>	<u>39</u>	34.7	31.7	30.7
AVG.	30.7	39.7	34. /	0111	
				#2-6E	LOT2 AVG
	#2-5S	#2-5E	<b>#2-65</b>		35.2
	38	37	36	37	
CENTER	36	38	33	32	32. B
CENTER		36	<u>42</u>	<u>32</u>	<u>35. 3</u>
PLAIN	<u>32</u>	37. <b>0</b>	37. Ø	<del>3</del> 3.7	34.4
AVG.	35.3	37.0	57.0		
			*0.16	#2-1E	#2-25
1b. Breaking Strength, 1b	s/in, FILL	•	#2-1S		16
ASTM D1682			13	22	15
ASIR DIBOZ		CENTER	16	23	
		PLAIN	<u>21</u>	<u>25</u>	<u>16</u>
		AVG.	16.7	23.3	15.7
		20.00	_		
		*0.05	#2-3E	#2-45	#2-4E
	#2-2E	#2-35		22	28
PICK	20	21	22	21	26
CENTER	24	16	20		24
PLAIN	22	<u>23</u>	<u>14</u>	<u>26</u>	<u>24.</u> 26. 0
AVG.	22.0	20.0	18.7	23.0	26. 0
KYO.	22.0				
	#2-5S	#2-5E	#2-6S	#2-6E	LOT2 AVG
		<u>27</u>	20	18	21.2
PICK	25		22	20	21.2
CENTER	29	22	22	20	<u>22.3</u>
PLAIN	<u>25</u>	<u>29</u>		<u>20</u> 19. 3	21.5
AVG.	26.3	26.0	21.3	13.0	<del>-</del> -
				42-15	#2-2 <u>5</u>
A Y			<u> #2-15</u>	#2-1E	97.1
2a. Carbon Assay, %		PICK	97.0	96.6	
MDDAI 5560		CENTER	96. B	96. B	96.5
		PLAIN	97.2	<u>96.8</u>	<u>96. 5</u>
		AVG.	97.00	96.73	<del>9</del> 6.70
		AVU.	2		
	_	**	#2-3E	#2-45	#2-4E
	<u>#2-2E</u>	#2-35		96.6	96.7
PICK	96.7	96.9	96.6	96.6	96.6
CENTER		<del>9</del> 6. 4	96.6		96.1
PLAIN		<u>96.7</u>	<u>96.8</u>	<u>96.5</u>	
	96.67	96.67	96.67	96.57	96.47
AVG.	,,,,,	_ <del>_</del>			

13 No. 18

# CCA-3 Fabric for NASA Lot# 2

### 2a. Carbon Assay, % (CONTINUED) MDQAI 5560

MDQAI 5560					
PICK CENTER PLAIN AVG.	#2-55 97.2 97.2 96.8 97.07	#2-5E 97.0 97.4 97.3 97.23	#2-65 97.2 97.2 96.7 97.03	#2-6E 96.7 96.7 96.4 96.60	LOT2 AVG 96.86 96.78 96.72 96.78
2b. Hydrogen Assay, % MDQAI 5560		PICK CENTER PLAIN AVG.	#2-15 .15 .14 .14	#2-1E .14 .14 .13 .137	#2-25 .14 .14 .14 .140
PICK CENTER PLAIN AVG.	#2-2E .15 .14 .14 .143	#2-35 .14 .15 .14 .143	#2-3E .15 .14 .14 .143	#2-45 .15 .14 .14 .143	#2-4E .17 .15 .13 .150
PICK CENTER PLAIN AVG.	#2-55 .13 .12 .13 .13	#2-5E .13 .12 .12 .123	#2-65 .13 .11 .12 .120	#2-6E .15 .13 .14 .140	LOT2 AVG .144 .135 .134 .138
2c. Nitrogen Assay, X MDQAI 5560		PICK CENTER PLAIN AVG.	#2-15 .9 .9 .8 .87	#2-1E .9 .8 .9	<u>#2-25</u> .8 .9 <u>.9</u> .87
PICK CENTER PLAIN AVG.	#2-2E 1.0 1.0 1.0	#2-35 1.0 .9 <u>.9</u>	#2-3E 1.0 .8 .8 .87	#2-45 1.0 .9 .8 .90	#2-4E 1.0 .9 <u>.8</u> .90
PICK CENTER PLAIN AVG.	#2-55 .8 .8 .8	#2-5E .7 .8 .7 .73	<u>#2-65</u> .8 .8 .9 .83	#2-6E .7 .8 .8 .77	LOT2 AVG .88 .86 .84 .86
		See Ch	arts 3A-3	F	

3. Visual Inspection QCi-102

See Charts 3A-3F

4.	Specific	Gravity,	Units
	PTM-84		

PTI	1-84
(NOTE:	Results are not reliable due to surface reliability)

#2-15	#2-1E	#2-25
3.5869	3.1237	3.9585
3.5685	3.1424	3.9578
3.6303	3.0861	3.9017
AVG. 3.595	3.117	3.939

					ŗa	ge 0 0
	CCA-3	Fabric fo	r NASA Lot	# 2		
	Unite	CONTINUE	(D)			
4. Specific Gravity, PTM-84		<u>#2-2E</u> 2.7368 2.7372 2.7623 2.745	#2-35 2.7120 2.9321 2.9903 2.878	#2-3E 3.0102 3.0151 2.8179 2.948	#2-45 2.8538 2.7906 2.7711 2.805	#2-4E 3.4570 3.5031 3.1211 3.360
	AVG.	#2-55 3.4576 3.4282 3.4942 3.460	#2-5E 3.1998 3.5782 3.3929 3.390	#2-65 3.6452 3.6616 3.6568 3.655	#2-6E 3.0166 3.3366 3.2870 3.213	LOT2 AVG 3.2298 3.3043 3.2426 3.259
5. pH, Units CTM-24B	,,,,,	-	AVG.	#2-15 8.0 8.0 8.0	#2-1E 8.2 8.2 8.2	#2-25 10.0 10.0 10.00
	AVG.	<u>#2-2E</u> 9.8 <u>9.8</u> 9.80	#2-35 9.2 9.0 9.10	#2-3E 9.1 9.0 9.05	#2-45 9.0 8.9 8.95	#2-4E 9.0 8.9 8.95
	AVG.	#2-55 8.5 8.4 8.45	#2-5 <u>E</u> 8.6 8.5 8.55	#2-65 8.0 7.8 7.90	<u>#2-6E</u> 7.8 <u>7.8</u> 7.80	LOT2 AVG 8.77 8.69 8.73
6. TGA, °C at 50% CTM-51 (AIR)	Weight i	2 2 2	SET UP #1 -4S 694 -5S 699 -62 699 VG. 697	2-19 2-11 2-29 2-29	600 5 588	#2 2-3S 603 2-3E 597 2-4E 581 2-5E 581 2-6E 585 AVG. 589
		9	See Charts	6A-6L		
7a. Atomic Absorpt CTM-53B	ion, PP	m	Na K Ca Mg L1 AVG.	#2-15 842 45 6 45 <u>0</u> 938	#2-1E 1027 50 6 55 <u>0</u> 1138	#2-25 956 45 8 70 0 1079
	Na K Ca Mg Li AVG.	#2-2E 801 37 7 72 <u>0</u> 917	#2-35 844 36 6 50 <u>0</u> 936	#2-3E 847 44 6 45 <u>0</u> 942	#2-45 811 43 8 56 0 918	#2-4E 833 35 8 45 <u>0</u> 921

# CCA-3 Fabric for NASA Lot# 2

	CCA-3 F	abric ior	MADA DE			
		(CONTINUE	נמ			
7a. Atomic Absorpti	on, ppm	(COM I THOS				
CTM-53B		#2 <u>-55</u>	#2-5E	#2-6S	#2-6E	LOT2 AVG
			563	423	495	747.2
	ĸ	36	45	45	43	42.0
	Ca	8	8	9	8	7.3 56.9
	Mg	84	47	61	53	
	Li		<u>Ø</u>			<u> </u>
	AVG.	652	663	538	599	633. 4
					#2-45	1.925
7b. Moisture Conter	nt, X		#2-15	2.272	#2-45 #2-4E	1.938
CTM-53B	•		#2-1E	2.497	#2-4E	1.738
<b>5</b> 555			#2-25	2.271	#2-5E	1.701
			#2-2E	2.104	#2-65	1.625
			#2-35	2.178	#2-6E	1.888
			#2-3E	2.056 Lot# 2	AVERAGE	2.016
				LOT# 2	ATENACE	
			15	. 370	#2-45	. 382
7c. Ash Content, %			#2-15	. 408	#2-4E	. 328
CTM-53B			#2-1E	. 398	#2-55	. 209
			#2-25	. 357	#2-5E	. 242
			#2-2E #2-35	. 351	#2-65	. 276
			#2-35 #2-3E	. 377	#2-6E	. 242
			#2-3E	Lot# 2	AVERAGE	. 328
				<b>200</b> –		
		WABB		#2-15	#2-25	<u>#2-35</u>
8a. Filament diame	ter, micr	ONS, WARE	AVERAGE		10.31	10.13
S.E.M. proced	ure		Minimum		7.50	9.35
(diameters ar	e an aver	aye	Maximu		14.05	11.50
10 measuremen	ite)		Std. De		1.93	<b>0.</b> 68
			#2-45	#2-5 <u>5</u>	<u>#2-65</u>	LOT2 AVG
		AVERAGE	10.27	10.60	10.52	10.28
		Minimum	9.35	9.35	8.50	6.65
		Maximum	11.25	12.65	12. 25	14.05 1.12
		Std. Dev	, <b>0.5</b> 6	Ø. <del>9</del> 5	1.09	1.12
		_			#0 10	
8b. Filament diam	eter, mic	rons, FILI	_		<u>#2-15</u>	
S.E.M. proce	dure			AVERAG	E 10.26	
(diameters a	re an ave:	rage		Minimu	m 9.05	
of 10 measu	rements				m 12.25 ev 0.97	
01 10 m2120	<b>-</b>			Std. D	ev 6.3/	
				40.15	#2-1E	#2-25
9a. Thread Count,	per inch	, WARP		#2-15	52 52	52
PTH-5A	-			52	52 52	52
Ç - <del>C</del>				51 50	51	52
				52 52	50	52
					5 <u>2</u>	54
			AVG.	<u>53</u> 52. 0	51.4	52.4
			AVI	~ / . Vi		

CCA-3 Fabric for NASA Lot# 2 9a. Thread Count, per inch, WARP (CONTINUED) PTM-5A #2-4E #2-45 #2-3E #2-35 #2-2E 53 52 53 53 52 53 53 51 52 51 52 53 51 52 52 52 53 52 52 51 <u>52</u> <u>53</u> <u>52</u> <u>52</u> <u>52</u> 52.4 53.0 51.6 52.2 51.6 AVG. LOT2 AVG #2-65 #2-6E #2-5E #2-5S 52.5 53 52 53 53 52.0 52 52 53 52 51.8 52 51 52 52 51.9 52 52 53 52 <u>52.6</u> <u>53</u> <u>52</u> <u>53</u> <u>53</u> 52.2 52.4 51.8 52.8 52.4 AVG. #2-25 #2-1S #2-1E 9b. Thread Count, per inch, FILL 49 49 49 49 PTM-5A 49 50 48 48 49 49 49 49 49 49 <u>50</u> 48.8 48.8 49.4 AVG. #2-4E #2-45 #2-3E #2-35 #2-2E 50 49 49 49 49 49 49 49 50 48 49 50 48 49 48 49 50 49 49 48 49 49 49 49 <u>49</u> 49.0 49.6 48.8 49.2 48.4 AVG. LOT2 AVG #2-6E #2-65 #2-5E #2-5S 49.0 48 49 49 49 49.1 49 49 49 49 48.8 49 49 49 50 48.9 49 48 49 49 49.2 49 49 <u>49</u> <u>50</u> 49.0 48.8 48.8 49.0 49.4 AVG. #2-25 #2-1E 10a. Areal weight as received, gm/4x4 #2-1S 2.897 2.951 2.916 LEFT PTM-3A 2.846 2.945 2.922 CENTER 2.890 2.959 2.933 RIGHT 2.878 2.952 2.924 AVG. #2-4E #2-45 #2-3E #2-35 #2-2E 2.897 2.921 2.969 2.942 2.873 LEFT 2.853 2.896 2.944 2.904 2.858 CENTER 2.920 2.897 2.911 2.928 2.861RIGHT 2.890 2.905

2.941

2.925

2.864

AVG.

# CCA-3 Fabric for NASA Lot# 2

10a.	Areal	weight	86	received,	gm/4x4	(CONTINUED)
	6 m v 1	<b>7</b> 4				

100	Areal weight	as receive	ed, gm/4:	4 (CONTIN	UED)		
IVa.	PTM-3A					*0 CE	LOT2 AVG
			#2-5S	#2-5E	#2-6S	#2-6E	2.912
		LEFT	2.898	2.951	2.833	2.901	2.885
		CENTER	2.850	2.906	2.803	2.889	
		RIGHT	2.852	2.954	2.842	2.912	2.905
		AVG.	2.867	2.937	2.826	2.901	2.901
		• • • • • • • • • • • • • • • • • • • •					40.05
105	Volatiles as	received.	×		#2-15	#2-1E	<u> </u>
TOD.	PTM-3A	,		LEFT	5.76	5.59	5.11
	1 111 011			CENTER	5.92	5.53	5.34
				RIGHT	<u>5.90</u>	<u>5.37</u>	<u>4.95</u>
				AVG.	5.86	5.50	5.13
							40 AE
			#2-2E	<b>#2-35</b>	#2-3E	#2-45	#2-4E
		LEFT	4.63	4.38	4.75	4.66	4.59
		CENTER	4.90	4.82	5.30	4.45	4.28
		RIGHT	4.82	<u>5. 09</u>	<u>4. 95</u>	4.80	4.45
		AVG.	4.78	4.76	5.00	4.64	4.44
						*0.65	LOT2 AVG
			#2-5S	<u> #2-5E</u>	#2-6S	#2-6E	4.57
		LEFT	3.76	3.59	3.78	4.21	4.72
		CENTER	4.11	3. <del>9</del> 9	3.85	4.19	
		RIGHT	<u>3.75</u>	<u>3.86</u>	<u>3. 91</u>	4.02	4.66
		AVG.	3.87	3.81	3.85	4.14	4.65
					*0.45	#2-1E	#2-2S
10c.	Weight Chang	e on Aceto	one Wash,	. X	#2-15	. 39	.76
	PTM-3A			ا الظيا	07	.50	.78
				CENTER	. 18	. 57	<u>. 55</u>
				RIGHT	<u>. 47</u>	.49	.70
				AVG.	. 19	. 45	.,,
				*0.05	#2-3E	#2-45	#2-4E
			#2-2E	#2-35	· 21	Ø4	40
		LEFT	. 69	. 18		33	44
		CENTER	.77	. 43	. 36	11	04
		RIGHT	<u>. 26</u>	<u>. 25</u>	<u>.33</u> .30	<del>16</del>	<del> 29</del>
		AVG.	. 57	. 29	. 30	10	,
				40-5F	#2-6 <u>5</u>	#2-6E	LOT2 AVG
			#2-55	#2-5E	<b>0</b> 7	. 00	.13
		LEFT	14	. 00	04	14	. 16
		CENTER	07	04		. 00	
		RIGHT	<u>04</u>	<u>11</u> 05	<u>11</u> 07	<del> 05</del>	<u>.17</u> .15
		AVG.	08	ws	<b>U</b> /	• • •	

U.S. Polymeric

Hamid M. Quraishi, Manager Quality Assurance Department

FOOTAGE	OF POOR	,	COMMENT		DATE 0/8/8C
20 80 80 80 80 80 80 80 80 80 8	- W - W - W - W - W - W - W - W - W - W	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		TREATHR OF BRAD UF	FABRIC COA 3  MFG. HITCO  ROLL NO. 18789  YARDS 94.4  DRDER NO. 7//08  SPECIFICATION 5744-3184-5002  Q.C. FILE A NASA 2-1  SYMBOLS  STATE OR STAINS  - FOLDS  - EDGE CURL  - TIGHT WEAVE OR SELVAN  - WEAVE DISTORTION  - VISIBLE PUCKERS  - TWO OR NORE CREASING  REMARKS  NASA ROLL # 2-1  STATE 2-1
4 2 EHT 180 51	45 (V.)	Saga	1		GRADE Grap B  GARCIA

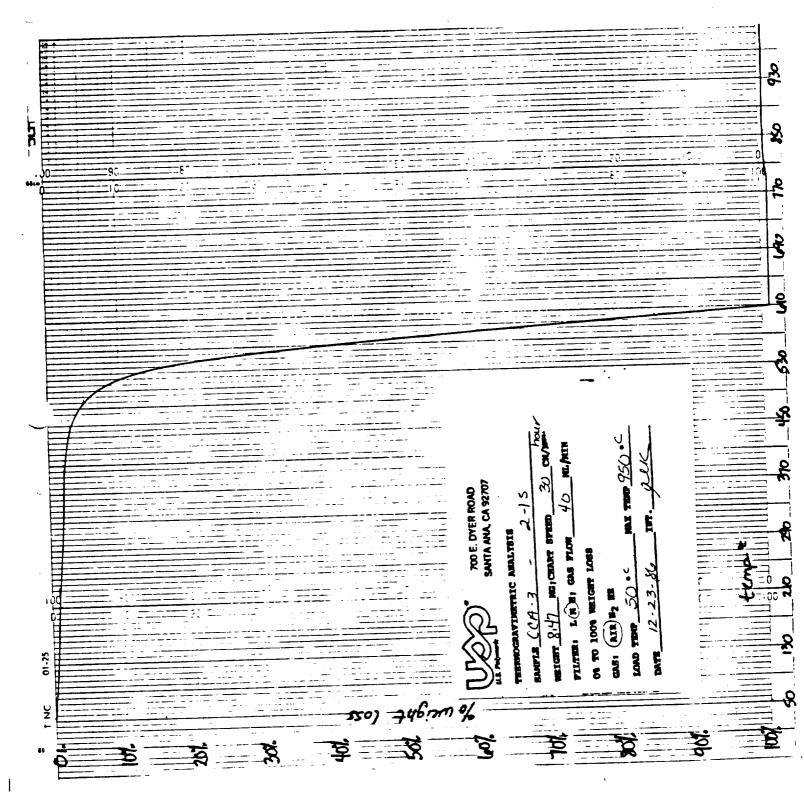
FOOTAGE	9	CONVENT	12FT 5	18/86
TT	STAIT Samp	7	FABRIC CCA 3	
20	1 !		ILITED.	
-5	1		MFG. HITCO	
	i		ROLL NO. 18778	
.9 w-	i		YARDS 150.5	
80	- ;w		POUNDS '922	
1 )	-  w		-	18
120	! !		SPECIFICATION STUM	3184-5cN2
1)	w		SPECIFICATION	2-2-
141			Q.C. FILE NASA	
180				
2)			TEAR	
no -	- 1 V	w	B ⊕ - SPOTS OR ST	enla
220	- SPLICE	I	1 - 1	
2. )	1 1		- FOLDS - EDGE CURL	
		_		
280	- ia-		- TIGHT WEAVE	
	spoict —	1	- EEALE 17721F	)RTION
320	1	1	- VISIBLE PU	JERS
3. ).	1	1	- ONE PUCKER	CREASING
3, 42 · W		<u>i</u>	- TWO DR NOR	e Creasings
20	- 4 <u> </u>	<u> </u>	]   —	
36y	- W1	i	REMARKS	
41	- a	1	NASA ROIL STAIL	2-2
420	1	1	579.7	-241 ENL
41.0	FAU Tames	1	<u>-</u>	
444				
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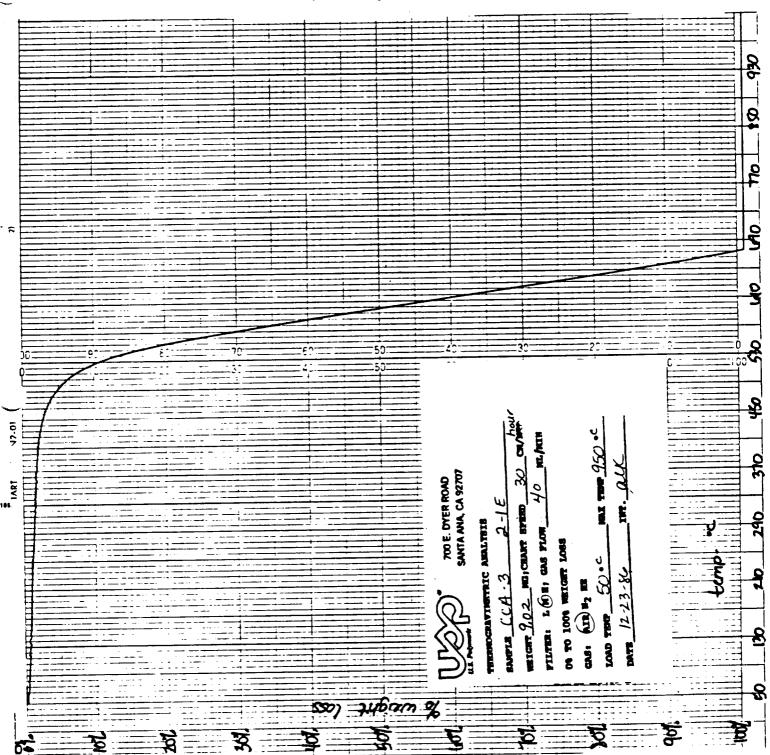
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	1		SPOTS OR STAINS
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2) 450 \$NO		1 1	S - EDGE CURL
200	1	Drenator	TIGHT WEAVE OR SELVACE
3 )	1 1		TIGHT WEAVE OR SELVACE  - WEAVE DISTORTION
320	1	TREATHR	- VISIBLE PUCKERS
3. 1	1 1	F	- DNE PUTKER TREASING
360			- TWO DR MORE CREASINGS
300			REMARKS
41)			NASA Roll # 2-5 STATT and END
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	MAIT 5	-4/6	TEFT 26/86
		1	FABRIC CCA 3 43"
	<b>1</b>	i	MFG. HITCO
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	1		ROLL NO
	<u>i</u>	1	YARDS 150.0
	75 W	i	POUNDS 90.2
	1144	] 	- ORDER NO 7/108
	1	!	SPECIFICATION STW 4 318
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1634	172 W	178 W	SYMBOLS NAJA 2.
		1	
	1 1900	Janes Company	- TEAR
	NG BREAK	3/11/12	SPOTS OR STAINS
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	1	<u> </u>	- VISIBLE PUCKERS
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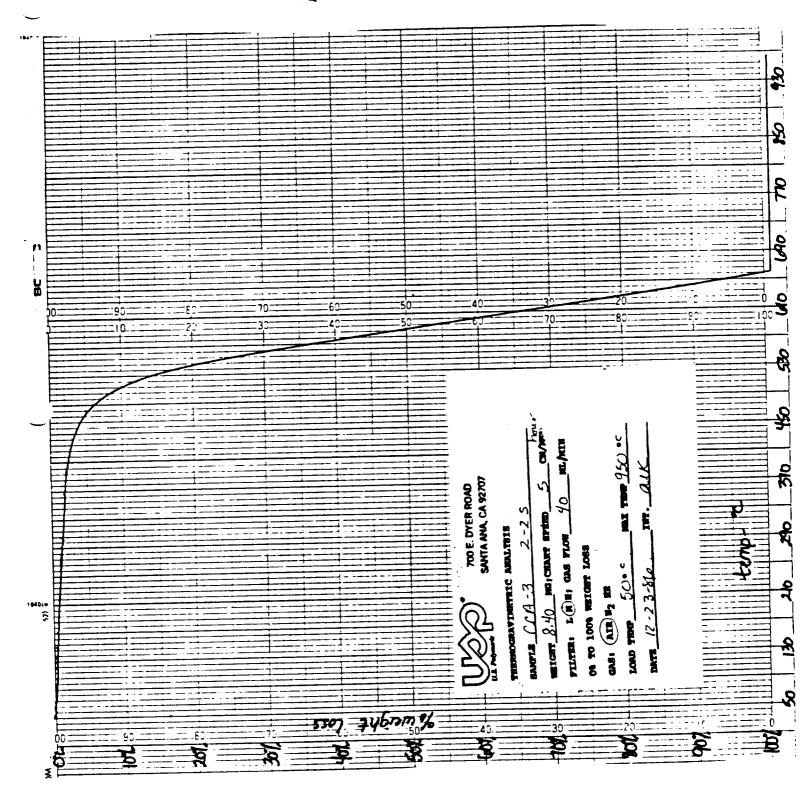
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20	30 W				MFG. HITCO
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80	90 w				POUNDS 93.4
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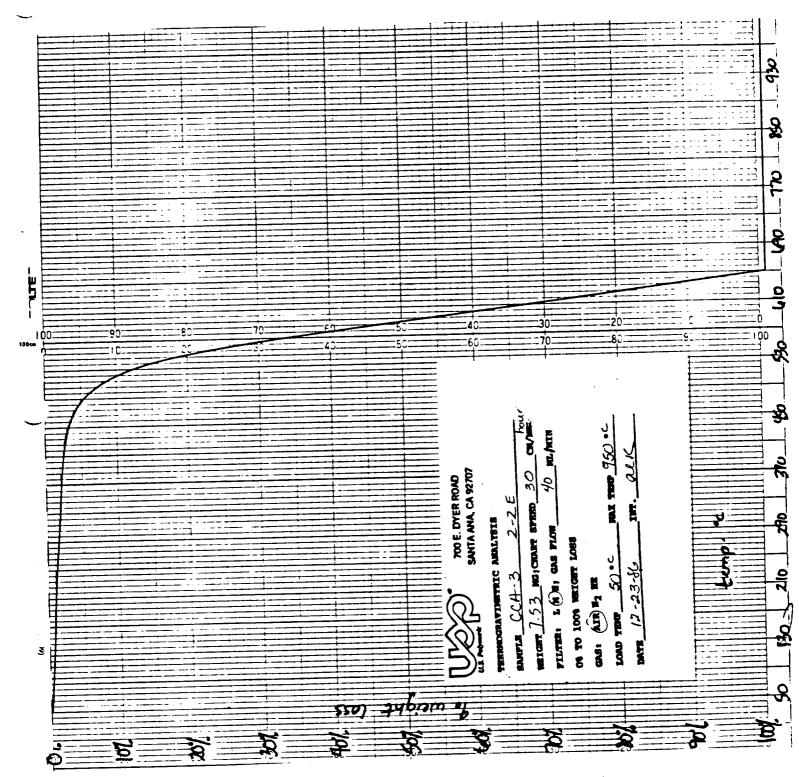


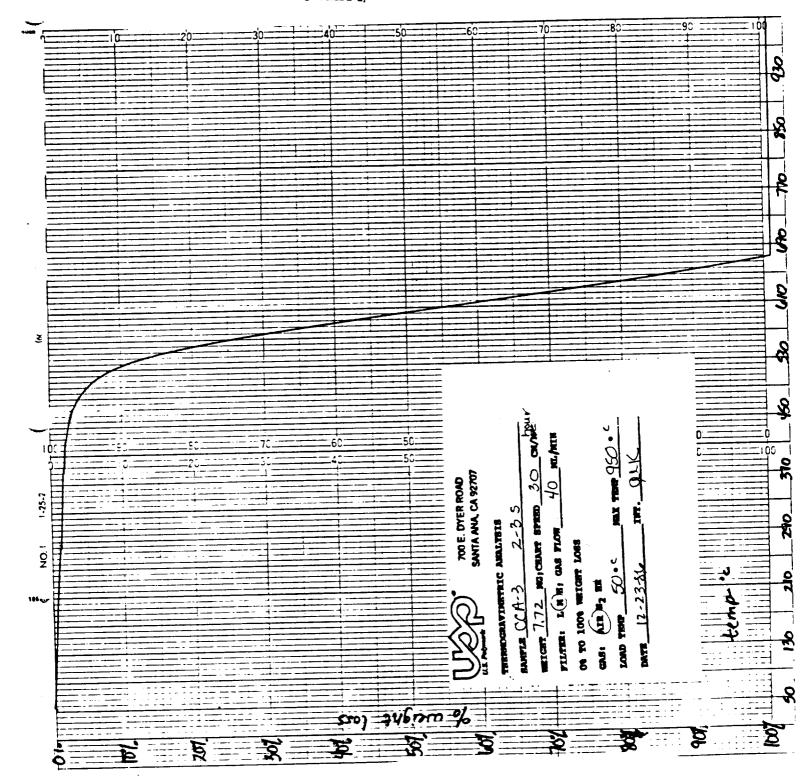


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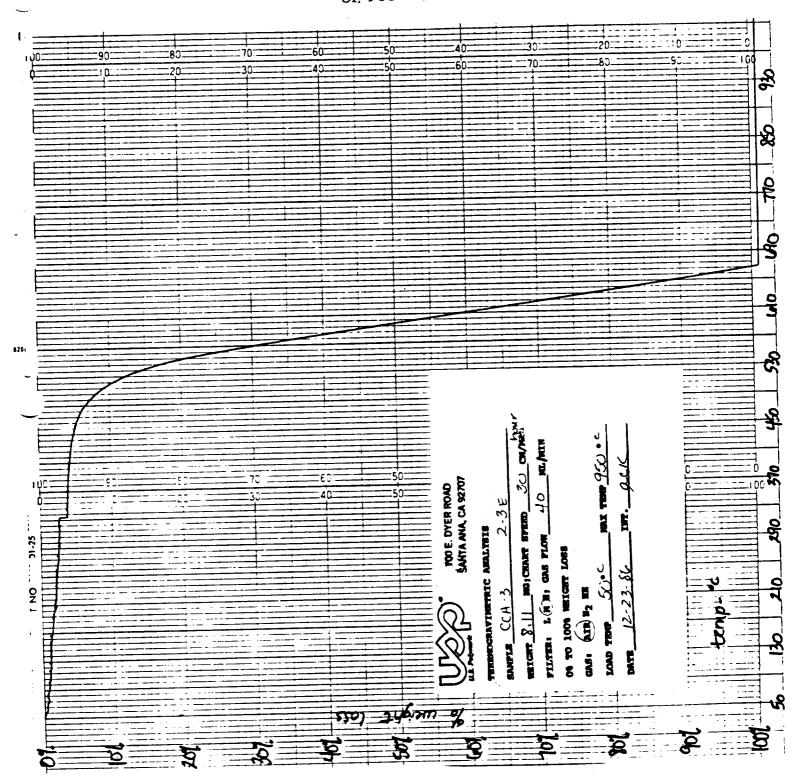


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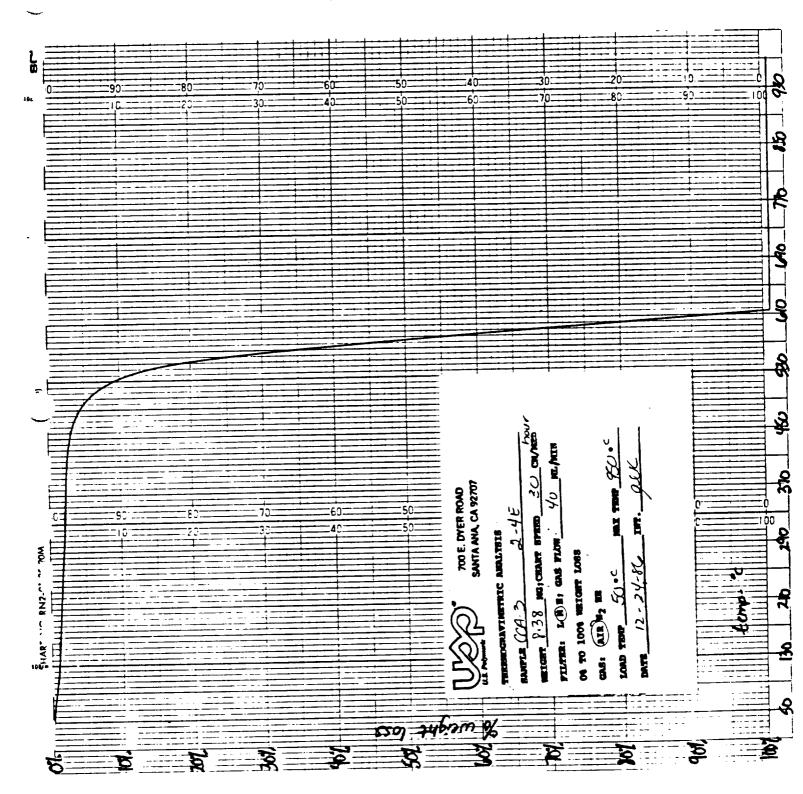
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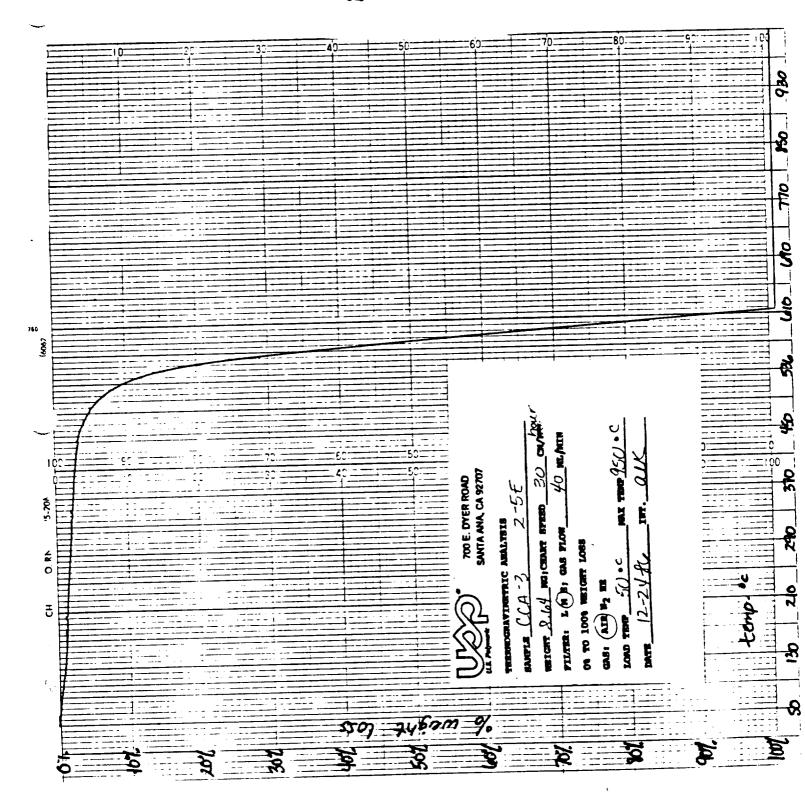
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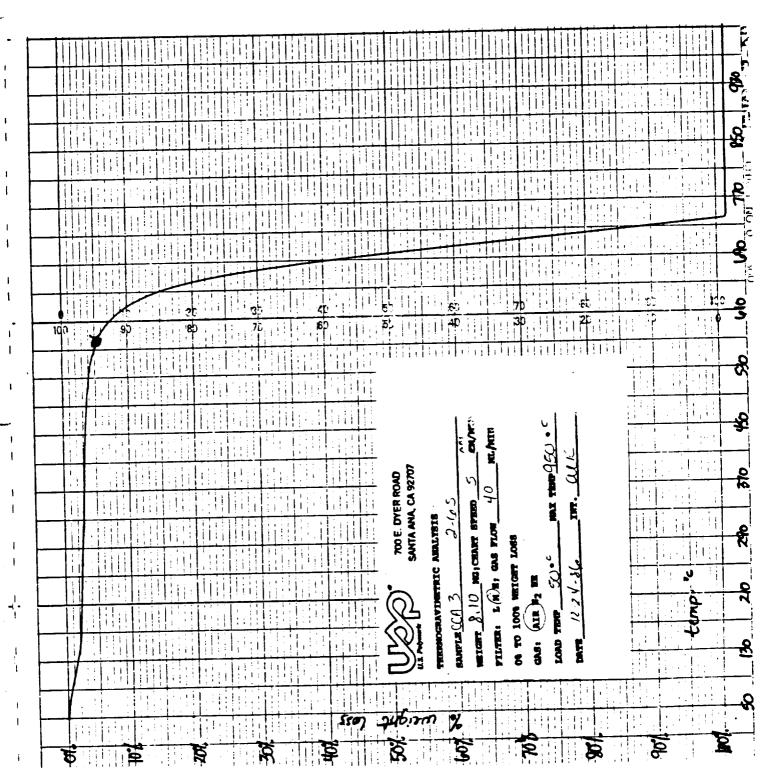
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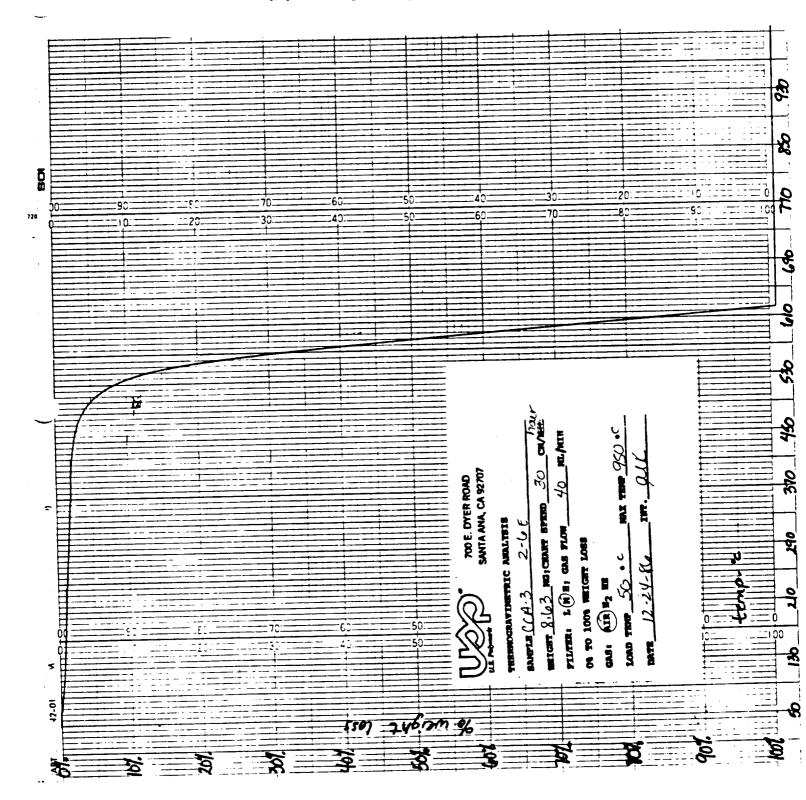


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#### TABLE OF CONTENTS

#### PREPREG TESTING

#### NAS8-36298

### U.S. Polymeric O.E. 71108

### FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

TEST		PA	GE	
1a.	Resin Content, Soxhlet		1	
1b.	Filler Content. Soxhlet	• •	2	
10.	Cloth Content. Soxhlet	• •	2	
2.	Valattle Content	• •	3	
3.	Flow	• •	3	
4.	Pagin Content. Dry Basis	• •	4	
5.	TBMP	• •	4	
6.	Col Time		5	
7a.	Atomic Absorption	• •	5	
7b.	Modeture Content		5	
7c.	Ash Content	• •	6	
8.	TGA	• •	6	
9.	DSC		6	
10.	Infrared (IRZB) Baseline		6	
11.	Environmental History		7	
12.	Specific Gravity		7	
13a.	Tensile Strength		8	
13b.	Tensile Modulus		8	
13c.	Tensile Elongation		9	
14a.	Flexural Modulus		9	
14b.	Compressive Strength		10	
15a.	Compressive Modulus		11	
15b.	Double Shear Strength		11	
16.	Barcol Hardness		12	
17.	Residual Volatiles		12	
18.	n Content Purplysis	• • •	12	
19.			10	
20.	CTC with miu	• • •	13	
21a. 21b.	CTE, crossply		14	
210.	CIE, CIOSDPI, CIOSOPI, CIO			
	<u>CHARTS</u>			
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Page 1 of 14

#### PREPREG TESTING

#### NAS8-36298

#### U.S. POLYMERIC O.E.71108

### FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

1 <b>a.</b>	Resin Content, CTM-6D		Soxhlet,	X AVG.	ROLL#1 START 33.2 32.7 34.5 33.5	ROLL#1 END 33.3 32.4 34.9 33.5	ROLL#2 <u>START</u> 33.1 31.3 <u>32.9</u> 32.4	ROLL#2 END 33.4 34.4 35.2 34.3
	AVG.	ROLL#3 START 33.0 32.8 35.7 33.8	ROLL#3 END 34.3 35.1 33.7 34.4	ROLL#4 START 33.8 34.4 34.3 34.2	ROLL#4 END 34.0 37.8 36.2 36.0	ROLL#5 START 33.2 34.5 34.0 33.9	ROLL#5 END 34.8 35.2 33.6 34.5	ROLL#6 START 33.8 32.6 34.9 33.8
	AVG.	ROLL#6 END 33.7 32.5 33.2 33.1	ROLL#7 START 32.8 34.0 34.7 33.8	ROLL#7 END 33.9 34.3 34.2 34.1	ROLL#8 START 33.9 34.3 33.5 33.9	ROLL#8 END 33.3 34.1 33.8 33.7	ROLL#9 <u>START</u> 34.8 34.7 33.7 34.4	ROLL#9 END 35.1 33.8 34.4 34.4

NASA LOT# 2 AVERAGE 34.0



	FH 50	ASSB NAS	A LOT# 2	u.s.P.	LOT# DØ92	274	
ib. Filler ( CTM-6D				ROLL#1 START	ROLL#1 END	ROLL#2 START	ROLL#2 END 13.9
CIU-OD				13.8	13.9	13.8	14.3
				13.6	13.5	13.0	14.7_
				14.4	14.5	13.7 13.5	14.3
			AVG.	13.9	14.0	13.5	14.5
					ROLL#5	ROLL#5	ROLL#6
	ROLL#3	ROLL#3	ROLL#4	ROLL#4	START	END	START
	START	END	START	END	13.8	14.5	14.1
	13.7	14.3	14.1	14.2		14.7	13.6
	13.7	14.6	14.3	15.7	14.4	14.0	14.5
	14.9	14.0	14.3	<u> 15. 1                                  </u>	14.2	14.4	14.1
AVG.	14.1	14.3	14.2	15.0	14.1	14.4	
AVO.		2011.47	ROLL#7	ROLL#8	ROLL#8	ROLL#9	ROLL#9
	ROLL#6	ROLL#7	END	START	END	START	END
	END	START	14.1	14.1	13.9	14.5	14.6
	14.0	13.7	14.3	14.3	14.2	14.5	14.1
	13.5	14.1	14.2	13.9	14.1	14.0	14.3
	<u>13.8</u>	14.4	14.2	14.1	14. 1	14.3	14.3
AVG.	13.8	14.1	14.4		SA LOT# 2	AVERAGE	14.2
				••••			
				ROLL#1	ROLL#1	ROLL#2	ROLL#2
ic. Cloth	Content,	Soxhlet,	*	START_	END	START	END
CTM-	6D			53. Ø	52.8	53.1	<b>52.7</b>
				53.7	54.1	55.7	51.3
				51.1	50.6	<u>53.4</u>	<u>50.1</u>
				52.6	52.5	54.1	51.4
			AVG.	J2. U			
		501140	ROLL#4	ROLL#4	ROLL#5	ROLL#5	ROLL#6
	ROLL#3	ROLL#3	START_	END	START	END	START
	START	END	52.1	51.8	53.0	50.7	52.1
	53. 3	51.4	51.3	46.5	51.1	50.1	53.8
	53.5	50.3	51.4	48.7	<u>51.8</u>	<u>52.4</u>	50.6
	49.4	<u>52.3</u> 51.3	51.6	49.0	52.0	51.1	<b>52.2</b>
AVG.	52.1	21.3	51.5				ROLL#9
		ROLL#7	ROLL#7	ROLL#8	ROLL#8	ROLL#9	
	ROLL#6	START	END		END	START	END 3
	END	53.5	52.0	52.0	<b>52.8</b>	50.7	50.3
	52.3	51.9	51.4	51.4	51.7		52.1 51.3
	54.0	50.9	51.6	52.6	<u>52.1</u>	52.3	51.2
	53.0	52. 1	51.7	52.0	52.2	51.3	21.2
AVG.	53.1					o AUEDAGI	51.9
				N	MASA LOT#	2 AVERAGE	J

2. Volati PTM-1	le Conten 7B	t, %	AVG.	ROLL#1 START 4.4 4.7 4.5 4.5	ROLL#1 END 4.0 4.0 4.2 4.1	ROLL#2 START 4.3 4.3 4.3	ROLL#2 END 3.8 4.0 4.2 4.0
AVG.	ROLL#3 <u>START</u> 4.4 4.7 <u>4.9</u> 4.7 ROLL#6	ROLL#3 END 4.2 4.3 4.0 4.2 ROLL#7 START	ROLL#4 START 4.3 4.3 4.2 4.3 ROLL#7	ROLL#4 END 3.8 3.7 3.7 3.7 ROLL#8	ROLL#5 START 3.8 3.7 3.9 3.8 ROLL#8 END	ROLL#5 END 4.1 4.5 4.5 4.4 ROLL#9 START	ROLL#6 START 3.7 4.2 4.1 4.0 ROLL#9 END
AVG.	END 3.9 4.3 4.0 4.1	4.0 4.3 4.4 4.2	4. 2 4. 0 4. 4 4. 2	4.1 4.0 4.4 4.2.	4.0 4.1 4.5 4.2	4.2 4.1 3.9 4.1	4.2 4.0 4.4 4.2
3. Flow, PTM-			AVG.	ROLL#1 START 20.0 17.9 19.7	ROLL#1 END 20.3 19.8 20.0 20.0	ROLL#2 START 19.9 20.0 20.2 20.0	ROLL#2 END 19.3 19.6 19.3 19.4
AVG.	ROLL#3 <u>START</u> 18.8 19.2 <u>18.7</u> 18.9	ROLL#3 END 19.8 19.5 19.0	ROLL#4 START 20.1 19.3 19.6 19.7	ROLL#4 END 12.4 14.0 13.8 13.4	ROLL#5 START 14.2 12.9 13.9 13.7	ROLL#5 END 19.7 19.5 19.2 19.5	ROLL#6 START 19.3 19.8 18.9 19.3
AVG.	ROLL#6 <u>END</u> 19.0 18.6 <u>19.4</u> 19.0	ROLL#7 <u>START</u> 15.6 14.9 16.0 15.5	ROLL#7 END 17.2 17.6 17.7	ROLL#8 <u>START</u> 16.9 16.7 <u>16.1</u> 16.6	ROLL#8 END 17.6 17.4 17.5 17.5	ROLL#9 START 17.1 16.5 17.0 16.9	ROLL#9 END 16.6 19.2 19.6 18.5
				1	NASA LOT#	2 AVERAG	SE 18.0

FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

FM 5055B	NASA LOT	# 2 U.S.	P. LOT# D	09274
	•			
		5011.41	POI 1 #1	POLI.

4. Resin	Content, 16F, Type	Dry Basis, II	, X	ROLL#1 <u>START</u> 34.4 35.0 <u>34.5</u> 34.6	ROLL#1 END 33.3 32.2 32.5 32.7	ROLL#2 <u>START</u> 34.2 32.5 32.5 33.1	ROLL#2 END 35.1 35.1 34.4 34.9
AVG.	ROLL#3 <u>START</u> 36.5 36.4 <u>35.5</u> 36.1	ROLL#3 END 32.5 32.9 33.9 33.1	ROLL#4 <u>START</u> 35.0 35.3 <u>36.1</u> 35.5	ROLL#4 END 34.5 32.4 33.0 33.3	ROLL#5 START 33.8 33.4 32.6 33.3	ROLL#5 END 35.3 34.7 34.9 35.0	ROLL#6 START 34.0 34.4 33.7 34.0
AVG.	ROLL#6 END 34.6 34.5 33.5 34.2	ROLL#7 START 32.9 33.4 33.1	ROLL#7 END 33.6 32.9 32.9 33.1	ROLL#8 START 34.1 33.2 33.2 33.5	ROLL#8 END 34.7 33.9 34.0 34.2	ROLL#9 START 33.9 34.4 34.3 34.2	ROLL#9 END 35.4 34.5 34.9

NASA LOT# 2 AVERAGE 34.0

			ROLL#1-5	63	ROLL#5-E	42
5.	TACK, 1bs		ROLL#1-E	49	ROLL#6-S	30
	PTM-80		ROLL#2-5	46	ROLL#6-E	36
			ROLL#2-E	40	ROLL#7-S	49
			ROLL#3-S	45	ROLL#7-E	37
			ROLL#3-E	50	ROLL#8-S	36
				45	ROLL#8-E	34
			ROLL#4-5		ROLL#9-S	29
			ROLL#4-E	20	ROLL#9-E	42
			ROLL#5-S			40
			N/	ASA LOT#	2 AVERAGE	40
		0da	ROLL#1-S	118	ROLL#5-E	110
6.		Seconds	ROLL#1-E	97	ROLL#6-S	101
	PTM-20E		ROLL#2-S	98	ROLL#6-E	93
			ROLL#2-E	92	ROLL#7-S	88
			ROLL#3-S	90	ROLL#7-E	91
			ROLL#3-E	104	ROLL#8-5	87
			ROLL#4-S	94	ROLL#8-E	86
			ROLL#4-E	75	ROLL#9-S	98
			ROLL#5-S	81	ROLL#9-E	102
				ASA LOT#		95

		74 E	aeed NA	SA LOT# 2	U.S.P	. LOT# De	9274	
					ROLL#1	ROLL#2	ROLL#2	ROLL#3
7a.	Atomic	Absorpti	on, ppm	ROLL#1	END	START	END	START
	CTH-5	3B		START	467	368	393	401
			Na	439	25	23	22	23
			_K	23	23 8	4	6	3
			Ca	5		5	6	4
			Mg	5	6	Ø	0	0
			Li			400	427	431
		7	TOTAL	472	506	400		
			DOL 1 #4	ROLL#4	ROLL#5	ROLL#5		ROLL#6
		ROLL#3	ROLL#4	END	START	END	START	END
		END	START	328	346	471	473	418
	Na	436	417	19	19	24	25	19
	K	23	19	7	4	4	3	5
	Ca	8	4		5	5	5	5
	Mg	7	6	6	0	0	<u>Ø</u>	
TOT	Li.	474	446	<u> </u>	374	504	506	447
.0.				ROLL#8	ROLL#8	ROLL#9	ROLL#9	LOT#1
		ROLL#7	ROLL#7	START	END	START	END	AVG.
		START	END	282	263		259	381
	Na	336	384	20	22		21	22
	K	21	22	4	4		3	5
	Ca	6	6	6	4		5	5
	Mg	6	4		ø			
	L1				293		288	413
TO	TAL	369	416	312	293			4.73
	W_4_4	ure Conte	nt. X	ROL	L#1-5		ROLL#5-E	4.73
7b	. noist				_L#1-E		ROLL#6-S	4.93
	Cin-	-336		ROI	_L#2-S	•••	ROLL#6-E	4.77
					LL#2-E		ROLL#7-S	5.00
				ROI	LL#3-5		ROLL#7-E	3. 00 4. 56
				ROI	LL#3-E		ROLL#8-S	4.66
				ROI	LL#4-S		ROLL#8-E	4.00
				RO	LL#4-E	<b>-</b>	ROLL#9-5	4 50
				RO	LL#5-5		ROLL#9-E	4.59 4.85
					NAS	SA LOT# 2	AVERAGE	4. 65
			<b>.</b>	RΩ	LL#1-5		ROLL#5-E	. 24
70		Content,	<b>%</b>		LL#1-E		ROLL#6-S	. 26
	CTH	-53B			LL#2-5		ROLL#6-E	. 22
					LL#2-E	. 18	ROLL#7-S	. 22
					LL#3-5	. 28	ROLL#7-E	. 22
					LL#3-E	. 21	ROLL#8-S	. 20
					LL#4-5	. 20	ROLL#8-E	. 18
					LL#4-E	. 19	ROLL#9-S	
					LL#5-S	. 14	ROLL#9-E	.19
					NA	SA LOT# 2	2 AVERAGE	. 20
					_			

					Page	6 of 14
	FH 50551	B NASA	LOT# 2 U.	S.P. LOT#	D09274	
8.	TGA, % weight loss (CTH-51 (Nitrogen)	at 500°C	ROLL#1-S ROLL#2-S ROLL#2-E ROLL#3-S ROLL#3-E ROLL#4-S ROLL#4-S	10.0 9.5 10.1 9.7 9.3 9.4 8.2	ROLL#5-E ROLL#6-S ROLL#7-S ROLL#7-E ROLL#8-S ROLL#8-E ROLL#9-S ROLL#9-E	9.6 8.9 9.4 9.3 9.6 9.1 8.8  8.3
9.	RO RO RO	LL#1-S LL#1-E LL#2-S LL#2-E LL#3-S LL#3-E	See char FIRST TEMP 176 176 178 178 179	t 8A-80	SECOND TEMP 242 242 241 242 244 242 241	

178

177

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179

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176

See chart 9A-9Q

NASA LOT# 2 AVERAGE 177

ROLL#4-S

ROLL#4-E

ROLL#5-S

ROLL#5-E

ROLL#6-S

ROLL#6-E

ROLL#7-S

ROLL#7-E

ROLL#8-S

ROLL#8-E

ROLL#9-5

ROLL#9-E

10.	Infrared CTH-21C	(IRZB)	Baseline	ROLL#1-S ROLL#2-S ROLL#2-E ROLL#3-S ROLL#3-E ROLL#4-S ROLL#4-E ROLL#4-E	1.11 1.08 1.10 1.07 1.10 1.10 1.10	ROLL#5-E ROLL#6-S ROLL#7-S ROLL#7-E ROLL#8-S ROLL#8-E ROLL#9-S ROLL#9-E	1.08 1.09 1.10 1.11 1.09 1.11 1.08 1.09 1.11
				1	MADA CO. W		

See chart 10A-10Q

11. Environmental History

Date manufactured: 27-28, May 1986 Package in: Polyethylene bag supported in cardboard carton

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Date shipped: 8, July 1986 in 40°F truck

NASA LOT# 2 AVERAGE 19.05

	FM	5055B N	ASA LOT#	2 U.S.P	LOT# DØ	9274	
					ROLL#1	ROLL#2	ROLL#2
12. Speci	fic Gravi	ty, Cured	, units	ROLL#1	END	START_	END
ASTH	D792			<u>START</u> 1.485	1.467	1.477	1.479
				1.486	1.433	1.467	1.473
					1.469	1.443	1.464
			AVG.	<u>1.485</u> 1.485	1.456	1.462	1.472
			AVG.	2			
	ROLL#3	ROLL#3	ROLL#4	ROLL#4	ROLL#5	ROLL#5	ROLL#6
	START	END	START	<u>END</u>	START	END	START
	1.486	1.480	1.484	1.469	1.482	1.473	1.480
	1.488	1.486	1.486	1.476	1.477	1.474	1.483
	1.488	1.476	1.479	1.472	<u>1.481</u>	1.463	1.483
AVG.	1.487	1.481	1.483	1.472	1.480	1.470	1.482
			201145	ROLL#8	ROLL#8	ROLL#9	ROLL#9
	ROLL#6	ROLL#7	ROLL#7		END	START_	END
	END	START	END	START		<u> </u>	1.481
	1.485	1.481	1.478	1.481	1.478		1.479
	1.477	1.483	1.470	1.471	1.481		1.479
	1.466	1.479	1.476	<u>1.485</u>	1.473		1.480
AVG.	1.476	1.481	1.475	1.479	1.477		1.400
				NA	SA LOT# 2	AVERAGE	1.476
_			MADD	ROLL#1	ROLL#1	ROLL#2	ROLL#2
13a. Ten	sile Stre	ngth, ksi,	WARF	START	END	START	END
FT	MS 406-10	11		19.62	19.26	19.46	19.39
				19.73	19.52	20.52	18.80
				18.68	19.59	18.80	19.45
				18.26	19.75	18.91	17.66
				18.25	20.04	20.85	20.08
					19.63	19.71	19.08
			AVG.	18.87	19.65	23.72	
	ROLL#3	ROLL#3	ROLL#4	ROLL#4	ROLL#5	ROLL#5	ROLL#6
	START	END	START	END	START	END	START
	16.62	17.32	18.73	19.50	16.87	20.95	19.52
	16.55	19.17	19.94	19.30	16.69	20.10	19.32
	18.38	17.95	19.20	18. <del>9</del> 3	17.27	12.78	18.19
	16.44	20.00	20.37	18.24	17.19	19.35	18.52
	18.20	17.77	19.23	19.21	<u> 15. 83</u>	<u> 19.77</u>	<u> 18. 13</u>
AVG.	17.24	18.44	19.49	19.04	16.77	18.59	18.74
AVG.			<u>_</u>	-01140	DOL 1 #4	ROLL#9	ROLL#9
	ROLL#6	ROLL#7	ROLL#7	ROLL#8	ROLL#8	START	END
	END	START	END	START	END	SIAKI 	19.62
	17.53	19.87	20.88	21.20	20.06		18.76
	18.08	20.7 <del>9</del>	20.34	22.74	19.80		20.39
	13.28	21.33	20.15	20.25	20.03		19.66
	16.82	22.44	20.21	19.94	17.40		
	17.65	22.21	20.81	<u> 20.69</u>	<u> 18.45</u>		<u>20.29</u>
AVG.	16.67	21.33	20.48	20. <del>9</del> 6	19.15		19.74

### FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

13b.		lle Moduli 5 406-101		WARP	ROLL#1 START 3.11 3.11 3.02 2.94 3.29 3.09	ROLL#1 END 3.12 3.26 2.99 3.26 3.13 3.15	ROLL#2 START 3.52 3.15 3.09 3.11 3.46 3.27	ROLL#2 END 3.15 3.10 3.05 2.91 2.99 3.04
	AVG.	ROLL#3 START 3.15 2.70 2.93 2.80 3.03 2.92	ROLL#3 END 3.20 3.07 3.01 3.11 3.41 3.16	ROLL#4 START 3.28 3.00 3.18 3.25 3.09 3.16	ROLL#4 END 3.93 3.16 3.16 3.09 3.10 3.29	ROLL#5 START 2.80 2.96 2.96 2.90 3.06 2.94	ROLL#5 END 3.18 3.37 3.14 3.10 3.03 3.16	ROLL#6 START 2.99 3.00 2.76 2.98 2.90 2.93
,	AVG.	ROLL#6 END 3.05 2.99 2.73 2.86 2.91 2.91	ROLL#7 <u>START</u> 2.97 2.90 3.00 3.04 <u>2.90</u> 2.96	ROLL#7 END 3.13 3.02 2.98 3.05 2.93 3.02	ROLL#8 START 2.99 3.15 2.99 3.00 2.94 3.01	ROLL#8 END 3.04 3.06 2.96 3.05 2.91 3.00	ROLL#9 START	ROLL#9 END 2.95 2.97 2.98 2.85 2.97 2.94

### NASA LOT# 2 AVERAGE 3.06

13c. Tensile Elongation, %, FTMS 406-1011	WARP	ROLL#1 START .97 .97 .92 .88 .82	ROLL#1 END .97 .88 .95 .92 1.00	ROLL#2 START .89 1.02 .91 .79 .82	ROLL#2 END .94 .98 .99 .90 .98
ROLL#3 ROLL#3 <u>START END</u> .80 .75  .78 .90  .94 .86  .82 .94  .87 .80  AVG84 .85	ROLL#4 START .79 .90 .95 .88 .88	ROLL#4 END .94 1.00 1.05 .98 1.03 1.00	ROLL#5 START 1.06 .90 .88 1.00 <u>.82</u> .93	ROLL#5 END 1.11 1.07 .77 .96 1.04	ROLL#6 <u>START</u> 1.07  1.02 .98 <u>.97</u> 1.01

2.76

2.83

2.72

2.94

2.82

3.04

2.96

3.01

2.85

2.98

2.50

2.68

2.60

2.65

2.58

2.77

2.69

2.63

2.85

2.85

2.76

AVG.

## FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

13c. Tensile Elongation, %, WARP (CONTINUED) FTMS 406-1011

FTMS 406-1031

130. TERE	15 406-101	1					
Fir	13 400				ROLL#8	ROLL#9	ROLL#9
	ROLL#6	ROLL#7	ROLL#7	ROLL#8		START	END
		START	END	START	END		1.01
	<u>END</u>		1.00	1.09	. 92		. 96
	. 87	1.05	1.06	1.19	. 99		1.06
	. 96	1.10		1.07	1.02		
		1.09	1.05	1.04	. 80		1.04
	. 91	1.09	1.01		. 94		1.03
	. 98	1.21	1.05	1.05	. 93		1.02
		1.11	1.03	1.09			
AVG.	. 93				A. 10T# 2	AVERAGE	. 96
				NA	SA LOT# 2	, AV2	
						501142	ROLL#2
			DADD	ROLL#1	ROLL#1	ROLL#2	END
14a Fle	xural Str	ength, ksi	., WARE	START	END	START	
148	MS 406-10	31		32.88	32.00	36.06	31.25
r ·					30.95	32.60	30.47
				29.41	37.76	31.30	30.93
				28.70	34.57	34.61	36.62
				29.43		34.92	<u> 30. 54</u>
				28.47	34.79	33. 90	31.96
			AVG.	29.78	34.01	33. 50	<del>-</del>
			A.O.				ROLL#6
				ROLL#4	ROLL#5	ROLL#5	START
	ROLL#3	ROLL#3	ROLL#4	END	START	END	
	START	END	START	30.53	30.96	32.80	29.38
	29.97	31.49	32.48		28.67	31.03	30.28
	_	29.34	32.84	30.98	30.46	31.91	29.09
	26.24	31.27	33.14	30.18		31.94	28.20
	30.41	32.61	33.74	29.39	29.61	3 <u>5.28</u>	28.3 <del>6</del>
	31.53		32.45	28.80	<u> 27.66</u>		29.06
	<u> 29. 14</u>	31.21	32.93	29.98	29.47	32.59	23.0-
AV		31.18	32. 93			_	ROLL#9
	-			ROLL#8	ROLL#8	ROLL#9	
	ROLL#6	ROLL#7	ROLL#7	START		START	END
	END	START	END		33.28		31.90
		36.75	34.57	33.80	34.41		32.72
	31.30	34.57	32.23	32.50	34.41		29.08
	30.58	31.84	31.58	34.68	35.66		33.72
	31.13		31.99	33.19	35.67		33.38
	29.68		31.63	<u> 37. 29</u>	<u>35. 89</u>		32.16
	29.69	38.19	32.40	34.29	34.92		J2
AV	G. 30.48	35.35	32.40	<b>3 2 3 3</b>			00 00
					NASA LOTA	2 AVER	IGE 32.00
					******		
					1 ROLL#	ROLL#	2 ROLL#2
		tadulue. M	S1. WARP	ROLL#	_	START	END
14b.	Flexural F	lodulus, m		START	END	2.83	3. 05
	FTMS 406-	-1031		2 77	2.48	۷. ۵۵	- 01

### FM 5055B NASA LOT# 2 U.S.P. LOT# D09256

### 14b. Flexural Modulus, msi, WARP (CONTINUED) FTMS 406-1031

AVG.	ROLL#3 START 2.88 2.86 2.71 2.87 2.98 2.86	ROLL#3 END 2.63 2.64 2.70 2.72 2.76 2.69	ROLL#4 START 2.87 2.90 2.86 2.79 2.69 2.82	ROLL#4 END 2.80 2.81 2.89 2.89 2.79 2.83	ROLL#5 START 2.79 2.76 2.73 2.60 2.72 2.72	ROLL#5 END 2.75 2.74 2.74 2.66 2.81 2.74	ROLL#6 START 2.64 2.56 2.71 2.63 2.61 2.63
AVG.	ROLL#6 END 2.75 2.75 2.74 2.69 2.48 2.68	ROLL#7 START 2.98 2.87 2.91 2.99 3.10 2.97	ROLL#7 END 3.16 2.94 2.86 2.80 3.14 2.98	ROLL#8 START 2.93 2.98 2.98 2.98 2.98 2.93	ROLL#8 END 3.06 2.66 3.07 3.19 3.00 3.00	ROLL#9 START    	ROLL#9 END 2.88 3.09 2.96 3.01 2.89 2.97

### NASA LOT# 2 AVERAGE 2.82

15a. Compressive Strength, ksi, FTMS 406-1021	56.78 54.64 58.75 53.06 52.77	ROLL#1 END 56.14 56.96 61.48 60.78 55.50 58.17	ROLL#2 START 61.91 54.49 58.08 58.81 59.39 58.54	ROLL#2 END 51.27 57.02 51.72 55.79 53.89 53.94
START         END         ST           57.90         62.41         49           60.65         61.18         47           69.32         59.71         52           54.95         58.97         47           53.17         58.44         46	ROLL#4 ROLL#4 RT END .73 51.57 .78 47.03 .98 55.08 .19 59.71 .05 55.88 .75 53.85	ROLL#5 START 37.91 43.12 49.76 38.55 44.01 42.67	ROLL#5 END 59.33 52.61 60.42 51.23 66.58 58.03	ROLL#6 START 46.33 51.42 51.92 49.95 51.87 50.30
END START END 54.80 53.96 52.57.35 58.90 56.54.43 52.66 64.52.88 64.29 57.50.24 55.04 55.04	ROLL#8 START  2.46 58.10 54.02 6.51 58.80 7.64 50.59 6.26 59.52 56.21	ROLL#8 END 58.96 50.09 62.37 54.81 49.88 55.22	ROLL#9 START	ROLL#9 END 48.57 55.16 57.02 59.58 57.34 55.53

FM 5055B
The compressive
START   STAR
ROLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#5 ROLL#6 START END START S. 2. 69 2. 61 3. 10 3. 01 2. 87 2. 80 3. 00 3. 01 2. 87 2. 80 3. 00 3. 01 2. 87 2. 80 3. 00 3. 01 2. 77 2. 80 3. 07 3. 01 2. 77 2. 80 3. 07 3. 01 2. 77 2. 80 3. 01 2. 77 2. 80 3. 01 2. 77 2. 80 3. 01 2. 77 2. 80 3. 01 2. 77 2. 80 3. 01 2. 77 2. 80 3. 01 2. 87 2. 80 2. 69 2. 61 3. 19 3. 01 2. 87 2. 81 2. 80 2. 69 2. 61 3. 19 3. 01 2. 87 2. 81 2. 80 2. 69 2. 61 3. 19 3. 16 2. 84 2. 79 2. 71 2. 82 2. 78 2. 94 3. 21 3. 16 2. 84 2. 79 2. 71 2. 82 2. 78 2. 94 3. 21 3. 21 3. 31 2. 86 2. 73 2. 89 2. 74 2. 91 3. 21 3. 31 3. 31 2. 86 2. 73 2. 89 2. 74 2. 85 3. 21 3. 21 3. 30 3. 22 86 2. 73 2. 86 2. 74 2. 85 3. 21 3. 21 3. 30 3. 22 86 2. 73 3. 20 3. 2
AVG. 3.00 3.01 2.76 2.81 3.10 2.90 3.10 2.76 2.81 3.10 2.90 3.10 2.93 2.58 3.03 3.07 2.94 2.91 2.77 2.80 3.07 3.07 3.01 2.77 2.80 3.07 3.01 2.77 2.80 3.07 3.01 2.77 2.80 3.07 3.01 2.77 2.80 3.00 2.99 2.95 2.67 2.92 2.80 3.00 2.93 3.11 3.31 2.86 2.73 2.87 2.74 2.91 3.01 3.06 2.86 2.73 2.86 2.74 2.91 3.11 3.31 2.86 2.73 2.86 2.70 2.70 2.79 3.11 3.06 2.86 2.73 2.86 2.70 2.74 2.85 3.00 2.99 2.96 3.13 3.06 2.86 2.78 2.94 3.00 2.78 2.80 2.78 2.94 3.00 2.78 2.80 2.78 2.94 3.00 2.78 2.80 2.78 2.94 3.00 2.86 2.73 2.86 2.70 2.70 2.79 3.10 3.06 2.86 2.73 2.86 2.70 2.85 3.00 2.99 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3
AVG. 3.10 2.93 2.58 3.03 3.07 3.01 2.77 2.80  ROLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#5 END START END START 2.99 2.95 2.67 2.92 2.69 2.61 3.19 3.01 2.87 2.84 2.79 2.71 2.80 3.00 3.00 3.00 3.19 3.01 2.87 2.81 2.80 2.69 2.61 3.19 3.01 2.87 2.81 2.80 2.69 2.61 3.19 3.16 2.84 2.79 2.71 2.82 2.78 2.94 3.21 3.16 2.84 2.76 2.87 2.82 2.78 2.91 3.21 3.16 2.86 2.73 2.86 2.73 2.86 2.74 2.85  AVG. 3.24 3.06 2.86 2.73 2.86 2.74 2.85  ROLL#6 ROLL#7 ROLL#7 END START END 3.00 3.00 3.00 3.00 3.00 3.00 3.00 3.0
AVG. 3.10 2.93 2.58 3.49 3.07 2.94 2.81 2.79 3.07 3.01 2.77 2.80  ROLL#3 ROLL#3 ROLL#4 ROLL#5 ROLL#5 ROLL#6 START END START END 2.67 2.92 2.80 3.00 3.19 3.01 2.87 2.81 2.80 2.69 2.61 3.47 2.84 2.79 2.71 2.82 2.78 2.94 3.21 3.16 2.84 2.79 2.71 2.82 2.78 2.94 3.21 3.16 2.84 2.79 2.71 2.82 2.78 2.91 3.21 3.16 2.86 2.73 2.89 2.70 2.79 3.11 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.06 3.06 2.73 2.86 2.74 2.85  ROLL#6 ROLL#7 ROLL#7 ROLL#7 ROLL#8 ROLL#8 ROLL#9 START END 3.00 2.75 2.97 3.07 3.06 3.10 2.75 2.97 3.07 3.09 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.18 2.76 3.06 3.05 2.98 2.96 3.18 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.06  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kgi FTHS 406-1041A ROLL#1 ROLL#1 ROLL#1 ROLL#1 ROLL#2 END 3.06  NASA LOT# 2 AVERAGE 2.93
AVG. 3.07 2.94 2.81 2.77 2.80  ROLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#6 START END START END START 2.99 2.95 2.67 2.92 2.80 3.00 3.01 3.21 2.99 2.95 2.81 2.80 2.69 2.61 3.19 3.01 2.87 2.81 2.80 2.69 2.61 3.47 2.84 2.79 2.71 2.82 2.78 2.94 3.21 3.16 2.84 2.76 2.87 2.74 2.91 3.21 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.06 2.86 2.73 2.86 2.74 2.85  ROLL#6 ROLL#7 ROLL#7 ROLL#8 ROLL#8 ROLL#8 ROLL#9 END START END START END START END START END 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.60 3.13 3.03 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 3.02 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 3.01 3.02 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 3.01 3.02 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 3.01 3.02 2.96 3.14 3.02 3.02 2.96 3.14 3.02 2.96 3.06 3.05 2.96 3.14 3.02 2.96 3.06 3.05 2.96 3.14 3.02 2.96 3.06 3.05 3.02 2.96 3.14 3.02 3.01 3.02 2.96 3.14 3.02 3.01 3.02 2.96 3.14 3.02 3.01 3.02 2.96 3.14 3.02 3.01 3.02 3.01 3.02 3.01 3.02 3.05 3.05 3.01 3.01 3.02 3.02 3.01 3.02 3.01 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.01 3.02 3.02 3.02 3.02 3.02 3.02 3.02 3.02
ROLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#5 START START END START 2.99 2.95 2.67 2.92 2.80 3.00 3.19 3.01 2.87 2.71 2.82 2.78 2.94 3.47 2.84 2.79 2.71 2.82 2.78 2.94 3.21 3.16 2.84 2.76 2.87 2.80 2.74 2.91 3.21 3.16 2.86 2.73 2.89 2.70 2.79 2.71 3.21 3.31 2.86 2.73 2.89 2.70 2.79 2.79 3.11 3.31 2.86 2.73 2.86 2.73 2.86 2.74 2.85 AVG. 3.24 3.06 2.86 2.73 2.86 2.74 2.85 AVG. 2.75 3.00 2.99 2.97 3.07 3.00 3.00 2.99 2.97 3.10 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.14 3.00 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 S.05 2.98 3.06 3.06 3.05 2.98 3.06 S.05 2.98 3.06 S.05 2.98 3.06 S.05 2.98 3.06 S.05 2.98 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.06 S.05 3.00 2.99 3.00 S.05 3.00 3.00 S.05 3.00 3.00 S.05 S.05 S.05 S.05 S.05 S.05 S.05 S
ROLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#5 ROLL#6 START END START END START END START END START END START END START END START END START END START END START END START END START END START END START END START END START END END END END END END END END END END
ROLL#3 ROLL#4 ROLL#8 ROLL#9 RO
ROLL#3   R
START   2.99   2.95   2.67   2.92   2.80   3.00   3.19   3.01   2.87   2.81   2.80   2.69   2.61   3.47   2.84   2.79   2.71   2.82   2.78   2.94   3.21   3.16   2.84   2.76   2.87   2.74   2.91   3.21   3.31   2.86   2.73   2.89   2.70   2.79   3.11   3.31   2.86   2.73   2.89   2.74   2.85   3.06   2.86   2.73   2.86   2.74   2.85   3.06   3.06   2.86   2.73   2.86   2.74   2.85   3.00   2.75   2.97   3.07   3.03   3.06     3.10   3.00   2.75   3.00   2.99   2.97   3.10     3.00   3.00   2.76   3.06   3.05   2.98   2.96     3.18   3.02   2.60   3.13   2.97   2.97   3.05   3.01     3.01   3.02   2.69   3.11   2.97   2.97   3.06   3.05   3.06   3.05   2.98   3.05     3.01   3.05   3.02   3.06   3.
3.21 2.87 2.81 2.80 2.85 2.94 3.19 3.01 2.87 2.71 2.82 2.78 2.94 3.47 2.84 2.79 2.71 2.82 2.78 2.91 3.21 3.16 2.84 2.76 2.87 2.74 2.91 3.21 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.31 2.86 2.73 2.86 2.74 2.85   ROLL#6 ROLL#7 ROLL#7 ROLL#7 END START END START END 3.00 2.75 2.97 3.07 3.03 3.06 - 3.00 2.75 3.00 2.99 2.97 3.10 - 3.00 2.76 3.06 3.05 2.98 2.96 - 3.18 2.76 3.06 3.05 2.98 2.96 - 3.18 2.60 3.13 3.03 2.96 3.14 - 3.02 2.60 3.13 3.03 2.96 3.14 - 3.02 2.69 3.11 2.97 2.89 3.05 - 3.01 2.69 3.11 2.97 2.89 3.05 - 3.01 2.69 3.11 2.97 2.89 3.05 - 3.01 2.69 3.11 2.97 2.89 3.05 - 3.01 2.69 3.11 2.97 2.89 3.05 - 3.01 3.06  NASA LOT# 2 AVERAGE 2.93  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, ksi START START END 4.24 4.73 3.20 4.48 4.52 4.66 3.78 4.01 3.95 4.69 3.78 4.01 3.95 3.23 3.81
3.19 3.01 3.47 2.84 2.79 2.71 2.82 2.78 2.31 3.21 3.16 2.84 2.76 2.87 2.74 2.91 3.21 3.31 2.86 2.73 2.89 2.70 2.79 3.11 3.31 2.86 2.73 2.86 2.74 2.85   ROLL#6 ROLL#7 ROLL#7 ROLL#7 END START END START END 3.10 2.75 2.97 3.07 3.03 3.06 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.18 2.60 3.13 3.03 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 2.69 3.11 2.97 2.89 3.05 3.01 2.69 3.11 2.97 2.89 3.05 3.06  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, ksi FTMS 406-1041A ROLL#1 ROLL#1 ROLL#1 ROLL#2 ROLL#2 START END START END 4.78 4.78 4.24 4.73 4.73 4.66 4.37 4.01 3.95 4.69 3.78 4.01 3.95 4.69 3.78
3.47 2.84 2.76 2.87 2.74 2.57 3.21 3.16 2.84 2.76 2.87 2.70 2.79 3.11 3.31 2.86 2.73 2.89 2.70 2.75 2.97 3.07 3.03 3.06 3.10 2.75 3.06 2.99 2.97 3.10 3.00 2.75 3.06 3.05 2.98 2.96 3.18 2.76 3.06 3.05 2.98 3.14 3.02 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 2.69 3.11 2.97 2.89 3.06 3.06 3.06 3.02 2.97 3.06 3.06 3.05 2.98 3.06 2.99 2.97 3.06 3.02 2.99 3.05 3.06 3.02 2.99 3.06 3.05 2.98 3.05 3.02 2.99 3.06 3.05 3.00 3.00 3.00 3.00 3.00 3.00 3.00
3.21 3.18 2.86 2.73 2.89 2.70 2.75  AVG. 3.24 3.06 2.86 2.73 2.86 2.74 2.85  ROLL#6 ROLL#7 ROLL#7 END START END START END 3.10 2.75 2.97 3.07 3.03 3.06 3.10 2.75 3.00 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.18 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 AVG. 2.71 3.05 3.02 2.97 3.06 3.06  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kg1 START END START END 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kg1 START END START END 4.73 3.20 4.78 4.24 4.73 4.01 3.95 4.66 4.37 4.01 3.95 3.78
AVG. 3.11 3.31 2.86 2.73 2.86 2.74 2.83  ROLL#6 ROLL#7 ROLL#7 END START END START END 3.10 2.75 2.97 3.07 3.03 3.06 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.18 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 2.69 3.11 2.97 2.89 3.06 3.06  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kg1 FTMS 406-1041A ROLL#1 ROLL#1 ROLL#1 ROLL#2 END 5.33 4.05 4.43 4.12 2.88 4.52 4.66 4.37 4.01 3.95 4.69 3.78
ROLL#6 ROLL#7 ROLL#7 ROLL#8 ROLL#8 ROLL#9 ROLL#9  END START END START END START END  2.75 2.97 3.07 3.03 3.06 3.10  2.75 3.00 2.99 2.97 3.10 3.18  2.76 3.06 3.05 2.98 2.96 3.18  2.60 3.13 3.03 2.96 3.14 3.02  2.69 3.11 2.97 2.89 3.05 3.01  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kg1  FTMS 406-1041A  ROLL#1 ROLL#1 ROLL#2 ROLL#2  START END START END  3.20 4.78 4.24 4.73  5.33 4.05 4.43 4.12  2.88 4.52 4.66 3.78  4.01 3.95 4.69 3.78
ROLL#6 ROLL#7 ROLL#7 ROLL#8 RO
ROLL#6 ROLL#7 ROLL#7 ROLL#7 END START END START END 3.10 2.75 2.97 3.07 3.03 3.06 3.00 2.75 3.00 2.99 2.97 3.10 3.00 2.76 3.06 3.05 2.98 2.96 3.18 2.76 3.06 3.03 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.05 3.01 2.69 3.11 2.97 2.89 3.05 3.01 AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kgi ROLL#1 ROLL#2 ROLL#2 START END START END START END START END 4.73 3.20 4.78 4.24 4.73 3.20 4.78 4.24 4.73 4.73 4.66 3.78 4.01 3.95 4.69 3.78 4.01 3.95 4.69 3.78
END START END 3.07 3.03 3.06 3.10 2.75 2.97 3.00 2.99 2.97 3.10 3.00 2.75 3.00 2.99 2.98 2.96 3.18 2.76 3.06 3.05 2.98 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.05 3.01 2.69 3.11 2.97 2.89 3.05 3.01 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kg1 FTMS 406-1041A ROLL#1 ROLL#1 ROLL#2 ROLL#2 START END START END START END 5.33 4.05 4.24 4.73 4.12 2.88 4.52 4.66 4.37 2.88 4.52 4.66 4.37 4.01 3.95 4.69 3.78 4.01 3.95 4.69 3.78
2.75 2.97 3.00 2.75 3.00 2.99 2.97 3.10 3.18 2.76 3.06 3.05 2.98 2.96 3.18 2.60 3.13 3.03 2.96 3.14 3.02 2.69 3.11 2.97 2.89 3.05 3.01 2.69 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 NASA LOT# 2 AVERAGE 2.93 **ROLL#1 ROLL#1 ROLL#2 ROLL#2 START END START END START END 4.73 5.33 4.05 4.43 4.12 5.33 4.05 4.66 4.37 2.88 4.52 4.66 3.78 4.01 3.95 4.69 3.78
2.75 3.00 2.95 2.98 2.96 3.18 2.76 3.06 3.05 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.05 3.01 2.69 3.11 2.97 2.89 3.05 3.06  AVG. 2.71 3.05 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  **ROLL#1 ROLL#1 ROLL#2 ROLL#2  **START END START END START END 4.73 3.20 4.78 4.24 4.73 3.20 4.78 4.24 4.73 4.01 3.95 4.66 4.37 4.01 3.95 4.69 3.78 4.01 3.95 3.81
2.76 3.06 3.05 2.96 3.14 3.02 2.60 3.13 3.03 2.96 3.05 3.01 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 3.06 AVG. 2.71 3.05 3.02 2.97 3.06 AVG. 2.71 3.05 3.05 3.06 AVG. 2.93 AVERAGE 2.93 AVER
2.60 3.13 3.03 2.95 3.05 3.06 3.06 3.06 3.06 3.06 3.06 3.06 3.06
2.69 3.11 2.97 3.02 2.97 3.06 3.06  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kgi FTMS 406-1041A  ROLL#1 ROLL#1 ROLL#2 ROLL#2  START END START END 5TART END 5.33 4.05 4.43 4.12 5.33 4.05 4.66 4.37 2.88 4.52 4.66 4.37 4.01 3.95 4.69 3.78 4.01 3.95 4.69 3.78
AVG. 2.71 3.05 3.02  NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, kgi FTMS 406-1041A  ROLL#1 ROLL#1 ROLL#2 ROLL#2  START END START END 3.20 4.78 4.24 4.73  3.20 4.78 4.24 4.73  2.88 4.52 4.66 4.37  2.88 4.52 4.66 3.78  4.01 3.95 4.69 3.78
NASA LOT# 2 AVERAGE 2.93  16. Double Shear Strength, ksi FTMS 406-1041A  ROLL#1 ROLL#1 ROLL#2 ROLL#2  START END START END 3.20 4.78 4.24 4.73  3.20 4.78 4.24 4.73  2.88 4.52 4.66 4.37  2.88 4.52 4.66 3.78  4.01 3.95 4.69 3.78
16. Double Shear Strength, kgi FTMS 406-1041A  ROLL#1 ROLL#1 ROLL#2 ROLL#2 START END START 4.73 4.73 4.05 4.43 4.12 5.33 4.05 4.66 4.37 2.88 4.01 3.95 4.69 3.78
16. Double Shear Strength, ksi FTMS 406-1041A  ROLL#1 ROLL#1 START END START END 3.20 4.78 4.24 4.73 3.20 4.05 4.43 4.12 5.33 4.05 4.66 4.37 2.88 4.52 4.66 3.78 4.01 3.95 4.69 3.78
16. Double Shear Strength, RS1 FTMS 406-1041A  START END STAR1 4.73 4.24 4.73 5.33 4.05 4.43 4.12 5.33 4.05 4.66 4.37 4.01 3.95 4.69 3.78
THS 406-1041X  3.20 4.78 4.24 4.12 5.33 4.05 4.66 4.37 2.88 4.52 4.69 3.78 4.01 3.95 4.69 3.81
5.33 4.05 4.43 4.12 2.88 4.52 4.66 4.37 2.88 4.52 4.69 3.78 4.01 3.95 4.69 3.81
2.88 4.52 4.66 4.37 4.01 3.95 4.69 3.78
4.01 3.95 4.69 3.73
7 44 3,00
3.88 <u>3.03</u> 4.25 4.16 AVG. 3.86 4.47 4.25
POLL#3 ROLL#3 ROLL#4 ROLL#4 ROLL#5 ROLL#5 START
FUD START END START 4.68
3.64 3.28 4.68 3.23 4.65 4.17
4.32 4.43 3.17 4.19 4.27 4.44 5.27
3.03 3.27 3.01 5.18 5.36 3.63 4.96
4.73 2.94 4.04 4.65 5.29 4.39
4.24
3.36 4.56 4.33
AVG. 4.48 4.09 3.30

35.04

33.78

35.00

34.61

35.33

34.70

35.73 35.25

35.66

36.36

35.55

35.86

35.64

36.52

36.34

36.17

AVG.

## FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

CTM-14

16. Double	Shear St	rength,	ksi (CON	(INUED)			
FTMS	406-1041A						
		_		ROLL#8	ROLL#8	ROLL#9	ROLL#9
	ROLL#6	ROLL#7	ROLL#7	START	END	START	END
	END	START	END	START	5.45		4.83
	3.93	4.71	5.67	4.68	5.92		4.26
	3.93	5.30	5.30	4.23	5. 25		5.88
	3.76	5.78	3.84	5.01	5. 34		5.10
	3.28	5.40	5.53	5.20			4.85
	4.46	6.33	<u>5.32</u>	<u>5.24</u>	5.41		4.98
AVG.	3.87	5.50	5.13	4.87	5.48		
				1	NASA LOT#	2 AVERAGI	E 4.51
			DO!	.L#1-S	71.8	ROLL#5-E	72.2
17. Barco	l Hardnes	s, Units		L#1-E	72.3	ROLL#6-S	70.7
AST	M D-2583			L#2-5	71.8	ROLL#6-E	71.6
(Av	erage of	10			73.4	ROLL#7-S	73.2
de	terminati	ous)		L#2-E	71.9	ROLL#7-E	72.5
				L#3-5	71.2	ROLL#8-S	73.0
				L#3-E	72.0	ROLL#8-E	73.6
				L#4-5		ROLL#9-S	
				LL#4-E	72.3	ROLL#9-E	72.4
			RO	LL#5-S	72.1	# 2 AVERAGE	
					MASA LUI	2 AVERNO-	
					ROLL#	1 ROLL#2	ROLL#2
18. Resid	fual Volat	iles, %		ROLL#1		START	END
PTM-				START	2.38	2.04	2.36
• • • •				2. 25		2.03	2.31
				2.23	2.35	1.96	2.28
				<u>2.15</u>	2.20	2.01	2.32
			AVG.	2.21	2.31	2.01	2.0-
			ROLL#4	ROLL#4	4 ROLL#	5 ROLL#5	ROLL#6
	ROLL#3	ROLL#3		START		START	END
	END	START	END	2.44	1.47	1.45	1.60
	1.87	2.46	2.54 2.58	2.38	1.51	1.56	1.54
	1.70	2.53	2.58 2.57	2.41	1.48	1.54	1.48
	1.80	2.37	2.57 2.56	$\frac{2.41}{2.41}$	1.49	1.52	1.54
AVG.	1.79	2.45	2.56	2			
		ROLL#7	ROLL#7	ROLL#	8 ROLL	#8 ROLL#9	
	ROLL#6		END	START	END	START	END
	END	START	1.67	1.16	1.76		1.80
	2.19	1.65	1.74	1.18	1.79		1.82
	2.18	1.66	1.70	1.19	1.75		<u>1.81</u>
	<u>2.16</u>	<u>1.66</u> 1.66	$\frac{1.70}{1.70}$	1.18	1.77		1.81
AVG.	2.18	1.65	20		NASA LO	T# 2 AVER	GE 1.93
							<del>.</del>
		. Bunalu	eis. %	ROLL4	1 ROLL		
19. Res	in Content	r, ryrury	,	START	r END	START	END OA
. ح	TM-14					<u> </u>	35.04

ROLL#2

END

. 46

ROLL#2

END

4.87

## FM 5055B NASA LOT# 2 U.S.P. LOT# D09256

### 19. Resin Content, Pyrolysis, % (CONTINUED) CTH-14B

ROLL#3 END 35.11 35.09 35.83 AVG. 35.34	ROLL#3 START 34.82 35.68 35.44	ROLL#4 END 32.58 32.08 32.75 32.47	ROLL#4 START 34.41 34.83 34.32 34.52	ROLL#5 END 35.36 34.17 37.39 35.64	ROLL#5 START 32.89 35.00 34.12 34.00	ROLL#6 END 34.61 34.09 33.61 34.10
ROLL#6	ROLL#7	ROLL#7	ROLL#8	ROLL#8	ROLL#9 START 2 AVERAGE	ROLL#9
END	START	END	START	END		END
34.63	35.42	37.95	35.67	38.11		37.08
34.71	33.54	36.31	36.13	38.47		37.06
33.65	32.73	37.43	34.72	38.84		36.04
AVG. 34.33	33.90	37.24	35.50	38.47		36.73

ROLL#1

END

. 17

ROLL#2

START

. 50

20.	Acetone Extraction,	%
	CTH-18A	

CTH-18A		AVG.	.42 .09 .34 .28	.17 .23 <u>.34</u> .25	. 40 49 13	.33 .59 .46
ROLL#3 END .27 -1.202324	ROLL#3 <u>START</u> 39 .08 <u>.15</u> 05	ROLL#4 END .23 .16 08	ROLL#4 <u>START</u> 08 09 -1.06 41	ROLL#5 <u>END</u> 47 .00 <u>.21</u> 09	ROLL#5 START 52 .17 70 35	.16 .22 .14
ROLL#6 END .081534 AVG09	ROLL#7 START .16 .24 .15	ROLL#7 END . 36 . 28 31 32	ROLL#8 <u>START</u> .59 14 <u>.98</u> .47	ROLL#8 END 16 .00 .08 03	ROLL#9 START	ROLL#9 END .08814238
<del></del> - <del>-</del> -			•	ACA LOT #	2 AVERA	

ROLL#1

START

. 42

### NASA LOT # 2 AVERAGE .05

ROLL#1

END

ROLL#2

START

4.21

21a.	CTE,	in/in	•F,	with	PLY
	PTH	-61B			

PTH	-61B		AVG.	5. 28 5. 45 5. 37	6.06 4.82 5.44	4.21 5.55 4.88	6.96 5.92
AVG.	ROLL#3	ROLL#3	ROLL#4	ROLL#4	ROLL#5	ROLL#5	ROLL#6
	END	<u>START</u>	END	START	END	START	END
	4.54	3.49	5.05	4.63	3.51	4.27	9.79
	5.28	<u>2.49</u>	5.19	3.58	4.43	5.17	5.36
	4.91	2.99	5.12	4.11	3.97	4.72	7.58

ROLL#1

START

ROLL#9

ROLL#8

ROLL#9

8.62

### FM 5055B NASA LOT# 2 U.S.P. LOT# D09274

ROLL#7

ROLL#8

6.38

21a. CTE, in/in \*F, with PLY (CONTINUED) PTM-61B

ROLL#6

7.40

AVG.

ROLL#7

	AVG.	ROLL#6 END 5.90 5.05 5.48	START 4.87 4.22 4.55	END 4.99 3.56 4.28	START 5. 38 4. 73 5. 06	END 4.26 5.24 4.75	START  	END 6.13 7.29 6.71
					N	ASA LOT#2	AVERAGE	5. 05
21b		in/in • -61B	F, Crossp	ly	ROLL#1 START 6.84 6.16 6.50	ROLL#1 END 9.58 11.27 10.43	ROLL#2 START 6.83 10.72 8.78	ROLL#2 END 11.34 7.27 9.31
	AVG.	ROLL#3 END 9.83 10.52 10.18	ROLL#3 <u>START</u> 7.77 <u>7.40</u> 7.59	ROLL#4 END 7.37 9.99 8.68	ROLL#4 START 6.21 7.08 6.65	ROLL#5 END 8.07 6.41 7.24	ROLL#5 START 10.01 6.92 8.47	ROLL#6 END 6.36 6.48 6.42
		ROLL#6 END 9.78	ROLL#7 <u>START</u> 7.72 8.51	ROLL#7 END 9.85 7.82	ROLL#8 START 6.97 5.78	ROLL#8 END 8.15 6.97	ROLL#9 START	ROLL#9 END 10.15 7.09

8.84

NASA LOT# 2 AVERAGE 8.14

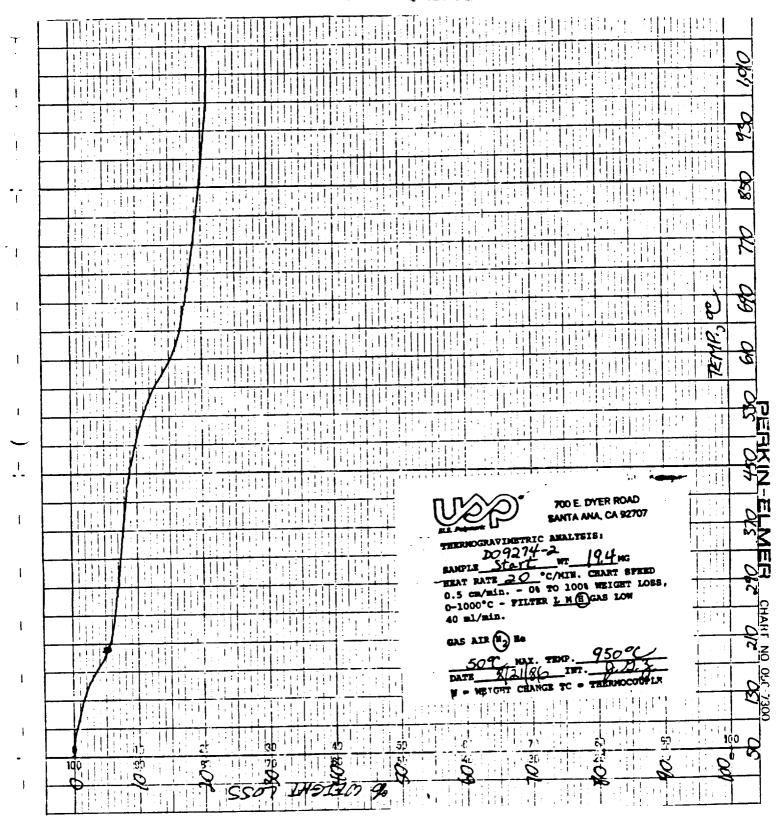
See chart 21A-21Q

U.S. Polymeric

Hamid M. Quraishi, Manager Quality Assurance Department

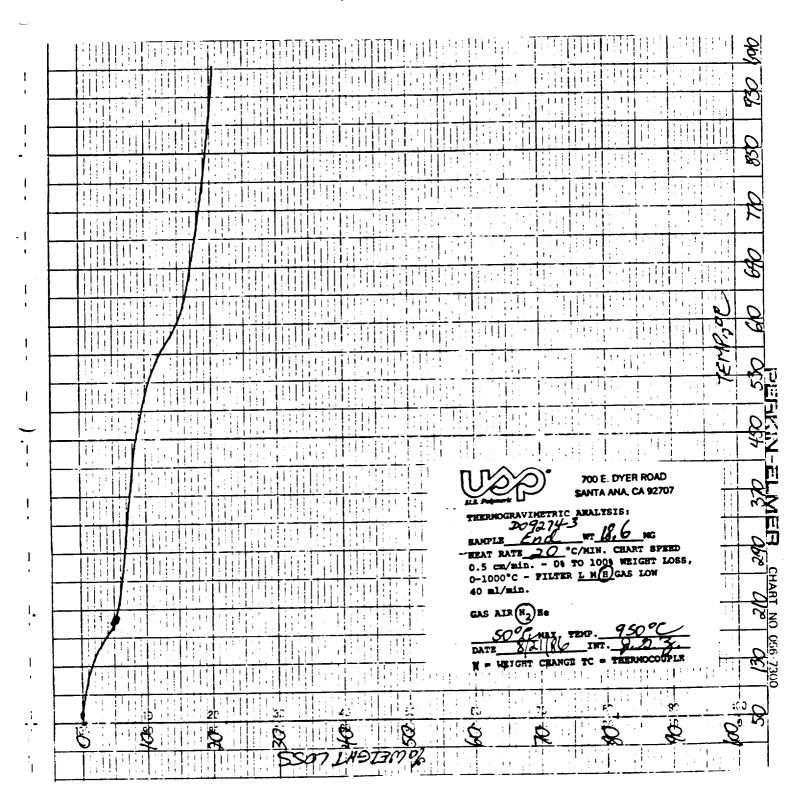
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ļ.	SAMPLE STATE CHART SPEED	0
	0.5 cm/min 0% TO 100% WEIGHT LOSS,	8
!	40 ml/min.	
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	SANTA ANA, CA 92707	7
i .	THERMOGRAVINGTRIC ANALYSIS:  D09274-  SNRIK End WT 18.9 MG	280
:	- HEAT RATE 20 °C/MIN. CHART SPEED	~~
1	0.5 CM/RIT. 0-1000°C - PILTER L ME GAS LOW 40 ml/min.	02° 0€7
!	GAS ATR(#2)He	7
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١	0.1000°C - FILTER L KE LAND
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1 1	FAMPLE OC/MIN. CHART SPEED  -HEAT RATE OC *C/MIN. CHART SPEED  -HEAT RATE OF TO 100% WEIGHT LOSS,  0.5 CM/MIN 0% TO 100% WEIGHT LOSS,  0-1000*C - FILTER L M B GAS LOW	&_
111	0-1000°C - FILTER E-1000°C - 40 ml/min.	78
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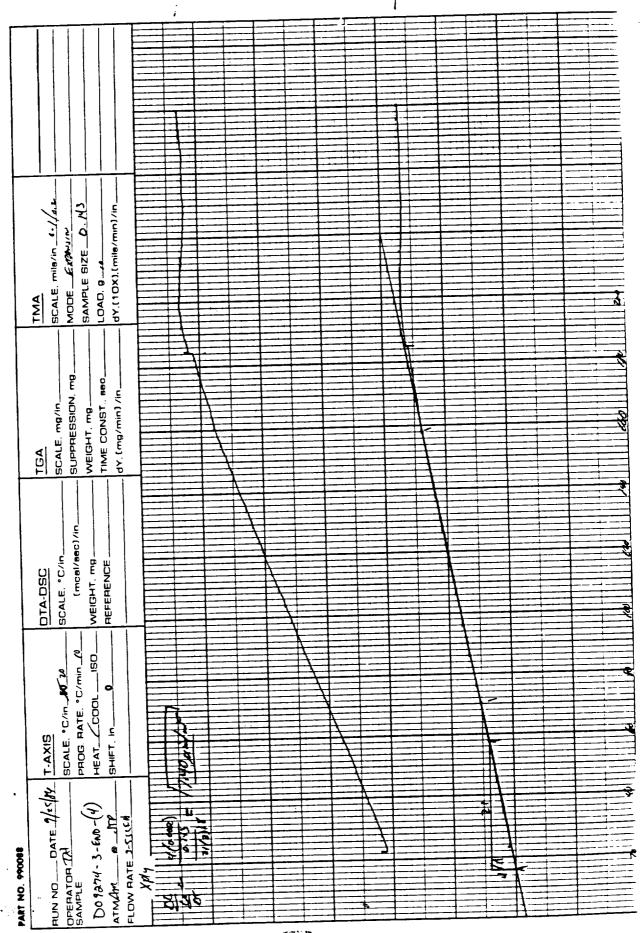
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stnamurteni (NOGUD)

Chart 21F3



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NO DATE 124/16	AXIS	DTA-DSC SCALE *C/In	SCALE. mg/ln	SCALE, mile/in 0 // 1.L	
r -	AGG HATE, "C/min [1-	cal/sec]/in	SUPPRESSION, mg	MODE ETANGE SANDE SAMPLE SIZE 4.29	
ATM ATT 6 X	SHIFT, In.	HETEHENCE	dY. [mg/min] /in	dY.(10X),(mila/min)/ia	
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Chart 2162 dY.(10X).(mils/min)/in\_ TMA SCALE, mile/in 6.1/6.1 SAMPLE SIZE 0, 255 MODE KIOMSON SUPPRESSION, mg. TIME CONST., 880. dY. (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA SCALE. "C/in. HEFERENCE. WEIGHT. mg. DTA-DSC SCALE. "C/in 36.7"
PROG RATE. "C/min (I)
HEAT / COOL \_\_\_\_ISO\_\_\_ SHIFT, in... AUN NO DATE THAT T-AXIS
OPERATOR OF SCALE. 009279-45705-(2) ATM AM 6 STO FLOW HATE 2-5364 PART NO. 990088 ements in the ments BJBAIRAV DBRUSABM

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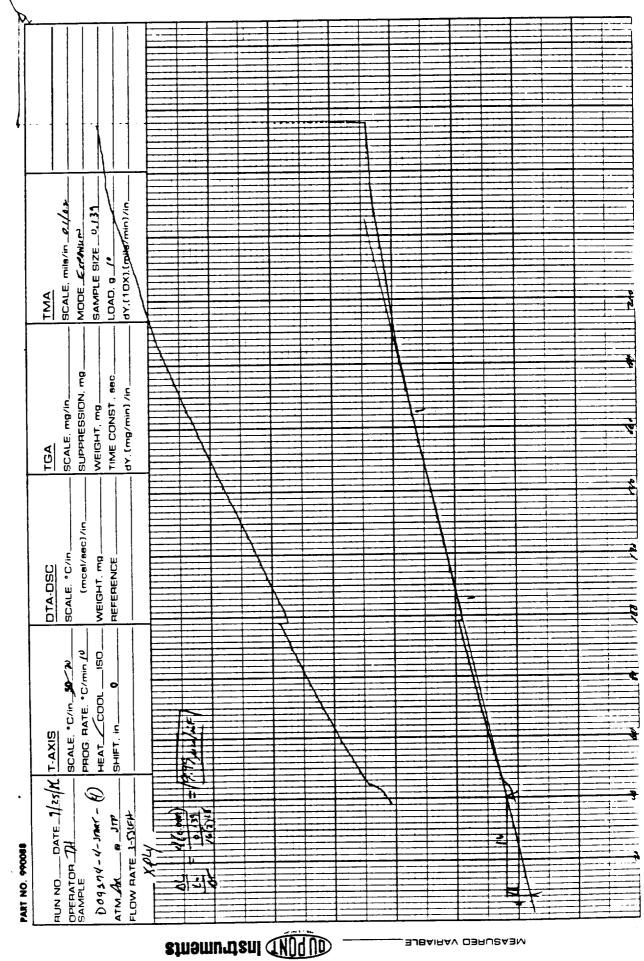
dY,(10X),(mils/min)/ln\_ SCALE, mile/in 6.1/6.1 SAMPLE SIZE U.IM MODE ENMISON LOAD. 9\_6 SUPPRESSION, mg. WEIGHT, mg \_\_\_\_\_ dY, (mg/min) /in\_\_ SCALE, mg/in. TGA (mcal/sec)/in WEIGHT, mg-SCALE. "C/in DTA-DSC PROG HATE, "C/min\_14 HEAT COOL 150. SCALE, "C/in\_\$0 14 SHIFT, In. T-AXIS OPERATOR THE SAMPLE \$ 09-274-4- Smart-(5) FLOW RATE . ) - CJ(FU) ATM OM @ SIT PART NO. 990088

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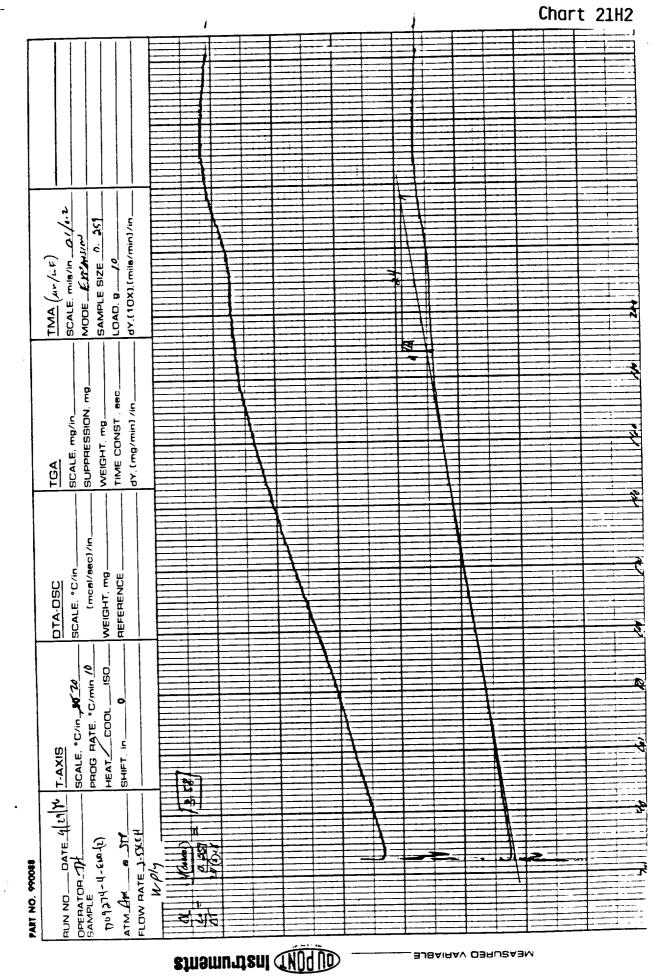
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Chart 21H1 ) TMA (Min/in) SCALE, mile/in\_0.1/0.2 SAMPLE SIZE 0. 257 MODE KICKNIM LOAD, 9\_\_\_\_ dY.(10X).(mil SUPPRESSION, mg. TIME CONST. 88C. dY. (mg/min) /in\_ SCALE, mg/ln. WEIGHT. mg. TGA (mcal/sec)/in WEIGHT, mg-SCALE, "C/in. DTA-DSC PHOG HATE "C/min 10 ISO SCALE, "C/in 30 2 HEAT\_COOL\_ SHIFT, in. T-AXIS OPERATOR OF SAMPLE DO9 271-9-END-6) ATM AN FLOW HATE J.SSCW PART NO. 990088 3 3 3 t SJBAIRAV OBRUZABM

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unart 21H3

SCALE, mile/in\_6.1/6.2 dY,(10X).(mile/min)/in. SAMPLE BIZE 0.141 MODE CAMPAIN IMA (4:/:E) LOAD. 9 SUPPRESSION, mg. TIME CONST. 88C. dY, (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. SCALE, "C/in. WEIGHT, mg HEFERENCE DTA-DSC PHOG HATE, "C/min 10 SCALE, "C/in 36 70 HEAT\_\_\_COOL\_\_ SHIFT, in. T.AXIS HUN NO DATE \$125/16 FLOW HATE 35354 8 BOTTH-4-END (4) OPEHATOR TA SAMPLE: PART NO. 990088 ATM DA stnamutzal (NOGUD) BJBAIRAY OBRUZABM

Chart 21H4 SCALE, mile/in a //a.t. dY.(10X).(mile/min)/in. SAMPLE SIZE 0.151 TMA (MILLE) MODE ENTINEM LOAD, 9\_\_\_\_ SUPPRESSION, mg. TIME CONST. 880 dY. (mg/min) /ln-SCALE, mg/in. WEIGHT. mg. WEIGHT, mg-SCALE. "C/in. DTA-DSC PROG RATE, "C/min 10 SCALE, "C/In 36 74 HEAT COOL OPERATOR THE SAMPLE SHIFT, in... 15)- CMJ-4-KUZLOQ ATM AN O STE STOCK PART NO. 990088

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Chart 2111 TMA (un/hif) SCALE, mile/in al/au dY,(10X).(mile/min)/in. MODE EXCHISING LOAD. 9 --SUPPRESSION, mg. TIME CONST. 88C. dY, (mg/min) /in\_ SCALE, mg/in-WEIGHT, mg. TGA (mcal/8ec)/in. WEIGHT, mg-SCALE. "C/in. DTA-DSC SCALE, "C/in 50 70 PROG HATE, "C/min 1 HEAT / COOL ISO. SHIFT, in. T-AXIS BUN NO DATE 1 30 17 I (1)- Jame - 5- Mare 1-(1) FLOW HATE 1-5 XEV PART NO. 990068

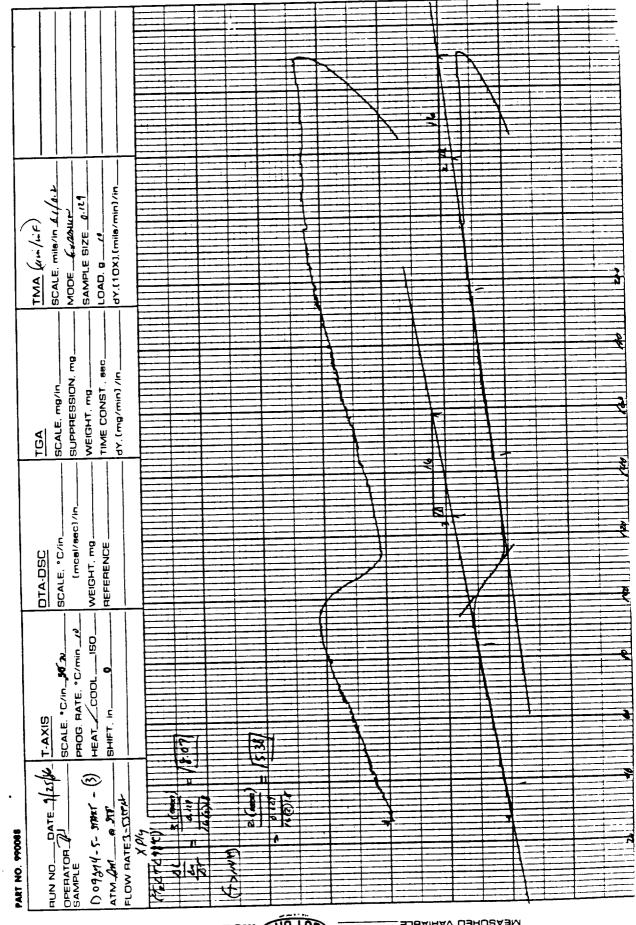
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Chart 21I2 SCALE mile/in 0.1/0 L LOAD. 9\_// dY.(10X).(mile/min)/in\_ SAMPLE SIZE\_UILL TMA (au./w.r) SUPPRESSION, mg. SCALE, mg/ln\_ (mcel/8ec)/in\_ WEIGHT, Mg-SCALE, "C/in. DTA-DSC PROG. RATE. "C/min 1 HEAT COOL ISO. SCALE, C/In 30 20 SHIFT, In\_ RUN NO DATE 1/2/14 T.AXIS OPERATOR TRI SCALE. Dog 274-5- STAME -(2) FLOW RATE\_3-CLETH ATM Set ATP PART NO. 990088

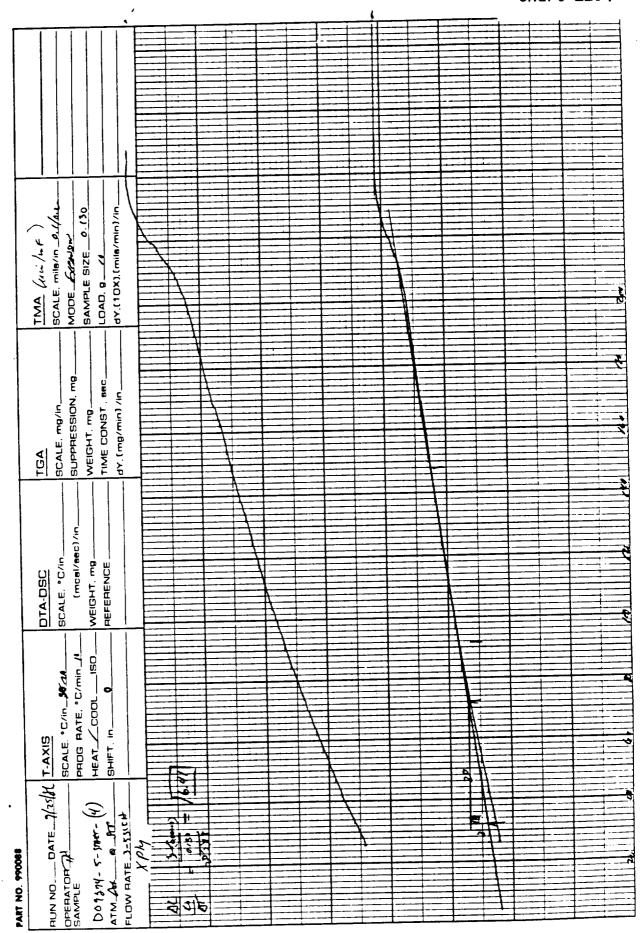
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Chart 21J1 SAMPLE SIZE 1.340 SCALE, mile/in 6.4/4. TMA (um/mF) SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_TIME\_CONST\_\_880 dY. (mg/min) /in\_ SCALE, mg/in TGA (mcal/sec)/in. WEIGHT, Mg. SCALE, "C/in. DTA-DSC SCALE, "C/in\_34 24\_\_\_\_ HEAT\_COOL\_ISO. SHIFT, In-HUN NO DATE 1/36 14-D09374-5-6ND-(1) FLOW HATE J-SICE! PART NO. 990088

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Chart 21J2 dY,[10X],[mile/min]/in\_ SAMPLE SIZE 0 353 SCALE, mile/in\_6//6 TMA (um/WF) MODE CHANCE LOAD, 9. SUPPRESSION, mg. TIME CONST., 88C. dY. (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA SCALE. "C/in. WEIGHT, mg. REFERENCE DTA-DSC SCALE, "C/in SOM HEAT\_COOL\_ISO\_SHIFT, In\_0 T-AXIS HUN NO DATE 9 19 14 SAMPLE ATM PM BATE 3-SICKE 109-314-5-8MD-(2) PART NO. 990088

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T-AXIS SCALE. °C PHOG BA HEAT SHIFT. In.
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PART NO. 990000.  BULN NO. DATE 1/2  SAMPLE  DO 4 574 - 5- Faid (3)  ATM Jul. 0- 577  FLOW RATE 3-5 REA  YOUN  YOU  TO A 5774 - 5 - Faid (3)

etnəmurteni (NOGUD)

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Chart 21J4

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SAMPLE SIZE 0.146 SCALE, mile/in 0.00 MODE Expanion TMA (41-1-F) SCALE, mg/in\_\_\_\_\_SUPPRESSION, mg\_ WEIGHT, mg\_\_\_\_\_ dY, (mg/min] /in. (mcel/sec)/in WEIGHT, mg\_ REFERENCE\_ SCALE, C/in. DTA-DSC SCALE, "C/in % " HEAT COOL 180 T-AXIS HUN NO DATE 19/1/18/4 OPEHATON 724 DO 9 374-5- (ND-(4) ATM CIT ... STR FLOW HATE J-SILE PART NO. 990068 stnamurtani (Miquo

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Chart 21K1 SCALE, mile/in 0//6.6 dY.(10X).(mile/mind/da SAMPLE SIZE V. LA MODE EXCENSION TMA (un/wr) LOAD, 9 10 SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY. (mg/min) /in. WEIGHT, mg-SCALE, "C/in DTA-DSC PROG BATE, "C/min\_11 HEAT\_\_COOL\_\_ISO\_ SHIFT, in\_ T-AXIS HUN NO DATE IN WOODERATOR IN FLOW HATE 3-5 S (KA DO 9274-10-5MMC-(1) PART NO. 990088 ATM AM

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Chart 21K2 SCALE, mile/in 01/61 dY.(10X).(mile/min)/in. MODE ECCOPSION TMA ("-/-F) LOAD. 9 SUPPRESSION, mg TIME CONST. 88C. dY. (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA (mcel/sec)/in SCALE. "C/in. WEIGHT, mg. PEFERENCE DTA-DSC PROG. RATE, "C/min 14 SCALE, C/in 10 20 HEAT\_COOL\_ SHIFT, in\_ T.AXIS RUN NO DATE 1 WW (a) - North -9- plane - 60 FLOW RATE 1-SLIEN ATM AM @ STP PART NO. 990088

stnamurtani (MOGUD)

EL SOAR JANIBIRO NEVENBED ANDREES ANDRESSE EL SANTANDE AO SO.

Chart 21K3 dY.[10X],[mile/min]/in\_ SAMPLE SIZE 0.131 SCALE, mile/in 0.1/4. MODE CANALL TMA (MIL/ILF) LOAD, g // SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY, (mg/min) /in. SCALE, mg/in (mcel/sec)/in. WEIGHT, mg... REFERENCE... SCALE, "C/in. DTA-DSC SCALE, "C/in \$6 24 HEAT\_COOL\_ISO. 9HIFT, in\_ T-AXIS BUN NO DATE 1411114 OPERATOR 77 DO4574-6- STARM - (3) FLOW HATE 3:53(FA PART NO. 990088

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atmemurteni (M<u>oup</u>)

SJBAIRAV OBRURABM

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Chart 21L1 LOAD, g\_\_/e dY.(10X),(mile/min)/in\_ SCALE MILB/IN 0//64 SAMPLE SIZE 0.157 TMA CALLE SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY. (mg/mipa/in. SCALE, mg/in. (mcal/89c) //n. WEIGHT, Mg -SCALE. "C/in. DTA-DSC BCALE. "C/IN # 20 PROG HATE. "C/MIN // HEAT COOL ISO SHIFT, in\_ T-AXIS HUN NO\_\_\_DATE\_\$130/19. DO 5,374 - 6-END -(1)
ATM FUR B SOT
FLOW HATE 3-54ER PART NO. 990088

stnəmurteni (MOG UD)

- 3J8AIRAY D3RUSA3M

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Chart 21L2 SCALE, mile/in 0.1/6.1 dY,(10X),(mile/min/in\_ MODE EXCHAMAL TMA (Air/i.c) LOAD. B SUPPRESSION, mg TIME CONST. 88C dY, (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA WEIGHT, mg\_ REFERENCE\_ SCALE. "C/In. DTA-DSC SCALE, "C/in M 20 HEAT COOL 150 SHIFT, in... T-AXIS 799 HUN NO DATE 1 14 1/4 OPERATOR 11/4 (3)-043-7-42860 FLOW RATE 25300 ATM CHK . O. ST PART NO. 990088

stnamurtani (MOQUD)

BJBAIRAY OBRUSABM

Chart 21L3 LOAD. 9 // dY.(10X).(mils/min)/in\_ SAMPLE SIZE ". 143 TMA (" ("F) SUPPRESSION, mg. WEIGHT, Mg dY. (mg/min) /in, SCALE, mg/ln. TGA (mcsl/sec)/in\_ WEIGHT, mg-SCALE. "C/in. REFERENCE. DTA-DSC PROG. RATE, "C/min // HEAT / COOL ...... ISO... SCALE, "C/in \$6 20 SHIFT, In. T-AXIS RUN NO DATE 10/1/14.
OPERATOR RJ (c) 043-9-4660Q FLOW HATE 3 55/6 ATM AM BY PART NO. 990088

**stnamurtani** (100 lb)

BJBAIRAY OBRUZABM

Chart 21L4 -۱۰۱/ (سناه/هانس) (X) ا ۸۲٬۲۱۵۲) MODE FITHING 143 TMA (LIN. L. F) LOAD, 9\_\_\_CO\_ SUPPRESSION, mg. TIME CONST. BOG. dY. (mg/min) /ln. SCALE, mg/in. WEIGHT, mg. (mcal/aac)/in\_ SCALE. "C/in. WEIGHT, mg. HEFERENCE DTA-DSC SCALE. "C/in 30 22 JSO\_ HEAT COOL T-AXIS OPERATOR THE SAMPLE (4) UN3-7-KELOC FLOW BATE 1-51CF PART NO. 990088

stnamurtani (Nigud)

ALEASURED VARIABLE

Chart 21M1 dY,(10X),(mile/min)/in. TMA (MI / II ) SCALE, mile/in 6.// SAMPLE SIZE 0.76 } MODE EXCLUSION LOAD, 9 SUPPRESSION, mg. TIME CONST., 880. dY, (mg/min) /in-SCALE, mg/in. WEIGHT. mg. TGA (mcel/sec)/in. WEIGHT, mg\_ REFERENCE\_ SCALE, "C/In. DTA-DSC SCALE, "C/in 30 24 PROG. RATE. "C/min 16 HEAT\_COOL\_ISO. SHIFT, In. T.AXIS RUN NO DATE 14/1/ OPERATOR THE SAMPLE (1) -2445-1-4268Q FLOW HATE, 3-5560 PART NO. 990088 ATM Del

**ethemutien** (M) q UD

SJBAIRAV DBRUSABM

Chart 21M2 SCALE mile/in 0//6 L LOAD, 9\_\_/, dY.(10X),(mil8/min)/in\_ SAMPLE SIZE 0, 16) MODE ENTRY TMA (WW/mr) SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY, (mg/min] /in\_ SCALE, mg/in. (mcsi/sec)/in. WEIGHT, mg-SCALE, "C/In DTA-DSC SCALE. "C/In 30 70 PROG BATE, "C/min // HEAT\_\_COOL\_\_ISO. SHIFT, In\_ T.AXIS OPERATOR TA 30 9574-7-5mar (2) 3 5 ATM ALL STREEL STORE PART NO. 990088 BJBAIRAV GBRUSABM

stnamurtant (MOG UD)

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Chart 21M3 dY.(10X).(mils/min)/in\_ SCALE, mile/in 01/6.5 SAMPLE SIZE 0.144 MODE CREMICAL TMA (ww/wr) LOAD, B SUPPRESSION, mg. TIME CONST. 88C. dY. (mg/min] /in\_ SCALE, mg/in. WEIGHT, mg-TGA SCALE, "C/In WEIGHT, mg. REFERENCE DTA-DSC SCALE. "C/in 36 24 HEAT COOL-SHIFT, In-T-AXIS RUN NO.\_\_\_DATE 14/1/1/ OPERATOR 724 D09374-7-50487-(3) - Sm FLOW HATE 1-51C PART NO. 990088 ATMAM

atnamurtani (M<u>odud</u>)

BJBAIRAV DBRUZABM

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TMA ((1/4-/1-) SCALE, mile/in 6.76.4 MODE (1/2) MODE (1/4-1/2) SAMPLE SIZE (1-1/4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
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RUN NO( OPERATOR_ SAMPLE: Do 9.314-7 ATM 24	

stnamurtani (NOGUD)

BJ6AIRAY 03RUSA3M

Chart 21N2 SCALE, mile/in 6//0.6 dY,(10X).(mila/min)/in. SAMPLE SIZE 10.760 MODE ENTANGE TMA (MIL/LIF) LOAD. 8 SUPPRESSION, mg. TIME CONST. 880 dY. (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. (mcal/sec) /in. WEIGHT, mg... SCALE. "C/in DTA-DSC SCALE. "C/in NO 22 HEAT COOL ISO. SHIFT, In. T-AXIS HUN NO\_\_\_\_DATE\_10/2/1/2.

OPEHATOR\_7/2
SAMPLE DO1274-7-Fun-(5) FLOW RATE 3. SIER PART NO. 990068

smamurtani (NOGUD)

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Chart 21N3

TMA (MIL/MF) MODE - Eximinal SAMPLE SIZE 0 14 SUPPRESSION, mg. WEIGHT, MB.\_\_\_\_\_ dY, (mg/min) /in. SCALE, mg/in. TGA WEIGHT, mg-SCALE, "C/In. DTA-DSC SCALE, "C/in 30 24 HEAT COOL ISO. SHIFT, In\_ RUN NO DATE 10/11/16 T-AXIS OPERATOR PI (1) My-L-HC6110 PART NO. 990088 FLOW RATE. ATM MIL BUBAIRAY DBRUZABM

etnəmutisni (N)(q)()

Chart 21N4 SCALE, mile/in 0,10.4 dY.[10X].[mils/min]/ln. SAMPLE SIZE 0.142 MODE KACALINY TMA (MIL/LE) LOAD, 9\_\_\_\_ SCALE, mg/in\_\_\_\_\_SUPPRESSION, mg. TIME CONST. 88C. dY. (mg/min) /in-WEIGHT, mg TGA (mcal/sec]/in. WEIGHT, mg-SCALE. "C/in DTA-DSC PHOG HATE, "C/min Le HEAT COOL 150 SCALE, "C/in 10 20 SHIFT, In. T-AXIS OPERATOR TA (1) - QU 3 - L - P CC 3 0 Q ATMAN . STP. PART NO. 990088 stnamurtani (MOG UD) BJBAIRAY DBRUSABM

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Chart 2101 LOAD. g // dY.(10X).(mils/min)/in\_ MODE ESTABLICED BASE TMA (MIL/LIE) SCALE, mile/in SUPPRESSION, mg. dY. (mg/min) /in SCALE, mg/in. TGA (mcel/sec)/in WEIGHT, mg\_ REFERENCE\_ SCALE, "C/in DTA-DSC SCALE, °C/in\_M 20 PROG, HATE, °C/min 20 HEAT COOL ISO SHIFT, In\_ T-AXIS -DATE (0/1/86) DO 19 74 - 1 - SMAT - (1)
ATM - BM - BD
FLOW HATE 3-556FH PART NO. 990088 PUN NO\_\_\_\_ OPERATOR\_ SAMPLE SJBAIRAY OBRUZABM ( etnəmurteni (M) (1)

Q.-

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Chart 2102 SAMPLE SIZE 0.267

LOAD. 9 (4) (mile/min)/in— TMA (µm/n P) SCALE, mile/in\_0.//6.6 MODE ENTRYING SUPPRESSION, mg. WEIGHT, mg TIME CONST. 880. dY. (mg/min) /in-SCALE, mg/in. WEIGHT, M9-SCALE. "C/in DTA-DSC SCALE, "C/in 10 20 PHOG HATE, "C/min 20 HEAT COOL -SHIFT, In-T-AXIS DOPENATOR THE SAMPLE D69274-8-39981-(2) FLOW RATE 1-5346 PART NO. 990068 ATMIGH

stnamurtani (Mod UD)

BJBAIRAV DBRUZABM

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SCALE, mile/in 61/0.2 MODE KETHILLE SAMPLE SIZE 0 145 TMA (MIN/LIF) SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_\_TIME CONST., 880. dY, (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg-SCALE. "C/in DTA-DSC PROG RATE. "C/min\_\_\_\_\_ HEAT\_\_\_COOL\_\_\_ISO\_ SHIFT, in. RUN NO DATE 10/1/1/ T-AXIS
OPERATOR 24 SCALE. DS 574 - 8 - START - (8) ATM CR (0 ST) FLOW HATE 3-53CF PART NO. 990088

stnamurtani (MOGUD)

BJBAIRAV DBRUZABM

Chart 2104 LOAD, g\_\_/o dY,(10X),(mile/min)/in\_ SCALE, mile/in 0/02 SAMPLE SIZE 0. 14 MODE EXONUM TMA (4-/-F) SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY, (mg/min) /in. SCALE, mg/ln. TGA WEIGHT, Mg\_ REFERENCE\_ SCALE. "C/in DTA-DSC 50 PROG RATE, "C/min 16 SCALE, C/In 10 20 HEAT COOL SHIFT, In\_ T-AXIS HUN NO DATE LUMIN.
OPERATOR DI 001274-8-START-(4) FLOW HATE 1-51CEA ATM Shik . O STE PART NO. 990088

stnamurtani (MOGUD)

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Chart 21P1 TMA (un/ur) SCALE, mile/in 0/61 LOAD, g 10 dY.(10X),(mile/mig/M MODE (1800-1811) SUPPRESSION, mg. dY. (mg/min) /in. SCALE, mg/in. TGA (mcal/sec)/in WEIGHT, mg-SCALE, "C/in DTA-DSC PHOG HATE. "C/min 1 HEAT\_\_COOL\_\_\_ISO\_ SCALE. "C/in\_\$6.24 SHIFT, in... T-AXIS OPERATOR THE (1)-049- 8-MELOQ ATM JUL OF STE FLOW HATE 2-55KELL PART NO. 990068 BUBAIRAY DBRUZABM

stnamurtani (Miglio)

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Chart 21P2 SAMPLE SIZE 0.265 dY.(10X).(mils/min)/in. MODE # WINSH TMA (ALL/LE) SCALE, mg/in\_\_\_\_\_SUPPHESSION, mg\_ TIME CONST. 88C. dY, (mg/min) /in\_ WEIGHT, mg-TGA WEIGHT, mg\_ REFERENCE\_ SCALE, "C/in. DTA-DSC PHOG HATE, "C/min\_10 ISO. SCALE, "C/in\_50 73 HEAT COOL SHIFT, in. RUN NO\_\_\_DATE\_LOJ1/K\_\_OPERATOR\_D (7- and -8- pre 200) ATM ALL M STAP PART NO. 990088 etnamurteni (MOGUD) BJBAIRAV OBRUSABM

dY.(10X).(mile/min)/in\_ SCALE, mile/in 01/1.2 MODE Eximally SAMPLE SIZE 0.146 TMA (un/hr) LOAD, 9 10 SUPPRESSION, mg dY, (mg/min) /In. WEIGHT, mg... SCALE, mg/in. (mcel/sec)/in. WEIGHT, mg. SCALE, "C/in, DTA-DSC PHOG HATE, "C/min (0) SCALE, "C/in 50 20 SHIFT, In\_ T-AXIS HUN NO\_\_\_OATE\_10/c/fC\_OPERATOR 7/ 10 9274 - 8-(41) -(3) ATM (141 - 8 377 FLOW HATE 3-5364 PART NO. 990088

stnamurtent (MOGLD)

\_\_ 3JBAIRAV O3RUZA3M

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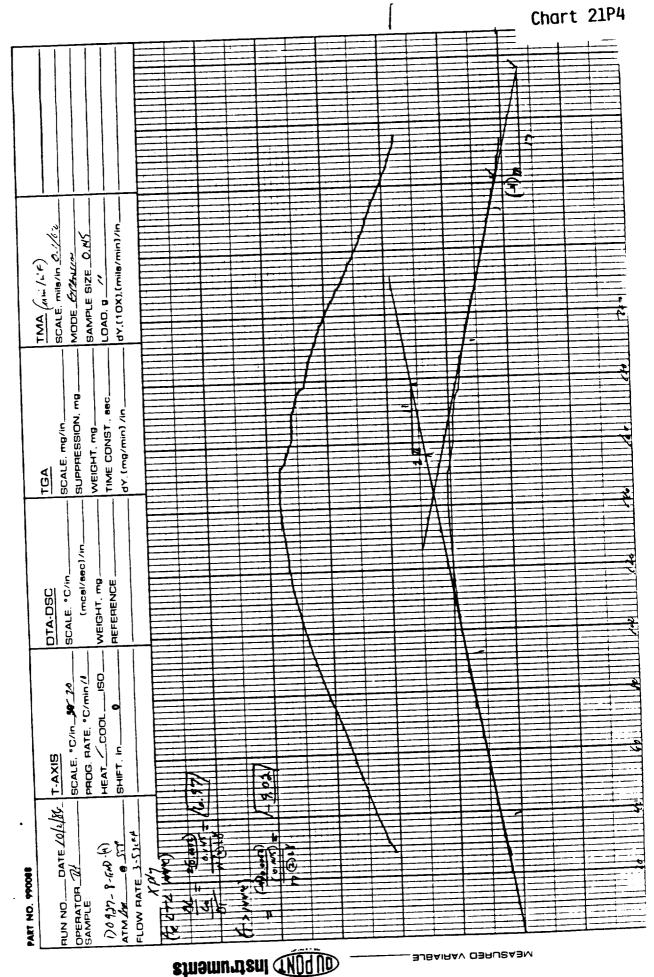


Chart 2101 dY,(10X),(mile/min)/in\_ TMA (ML/LIF) SCALE, mile/in 5/6 E MODE EXCENSION BENTALE BIZE 0. 251 LOAD. 9 🧀 SUPPRESSION, mg. TIME CONST. 88C. SCALE, mg/in. dY. (mg/min) WEIGHT, mg. TGA (mcal/sec)/in SCALE, "C/In WEIGHT, mg. REFERENCE DTA-DSC HEAT COOL ISO. SCALE, "C/In \$6/20 SHIFT, In. RUN NO DATE 3/2/1/ T-AXIS OPERATOR THE SAMPLE (1)-0-3-6- herbod FLOW HATE J-SSEF PART NO. 990088 ATM AM

stnamurtani (MDQ UD)

BJ8AIRAV DBRUZABM

Chart 21Q2 LOAD, g //e dY,(10X),(mile/min)/in/ SAMPLE SIZE 0.254 SCALE, mile/in .c. 1/4.3 MODE EXCHALLA (r./i.r) AMI SUPPRESSION, mg. dY. (mg/min) /In\_ WEIGHT, MB\_ SCALE, mg/in. (mcel/sec)/in. WEIGHT, mg-DTA-DSC SHIFT, in\_ T-AXIS OPERATOR PLESAMPLE: (2)-wy-1-kc 600 ATMAN A STS PART NO. 990068 stnamutani (MOGDD) BJBAIRAV DBRUZASM

Chart 21Q3 SAMPLE SIZE 1.146
LOAD. 9 (0)
- dY.(10X).(mile/min)./in SCALE, mile/in\_0.1/6.2 MODE Edinger (mu/re) TMA SUPPRESSION, mg. TIME CONST., 880 dY, (mg/min) /ln\_ SCALE, mg/in. WEIGHT, mg. SCALE, "C/in. WEIGHT, mg-DTA-DSC SCALE, C/in 30 20 PROG RATE, C/min (4) HEAT COOL SHIFT, in... T-AXIS RUN NO DATE 9 44 44 D09574-9-FM-(3) ATM BIK & STT PART NO. 990088 ব্যাহ

stnamurtani (1/07 UD)

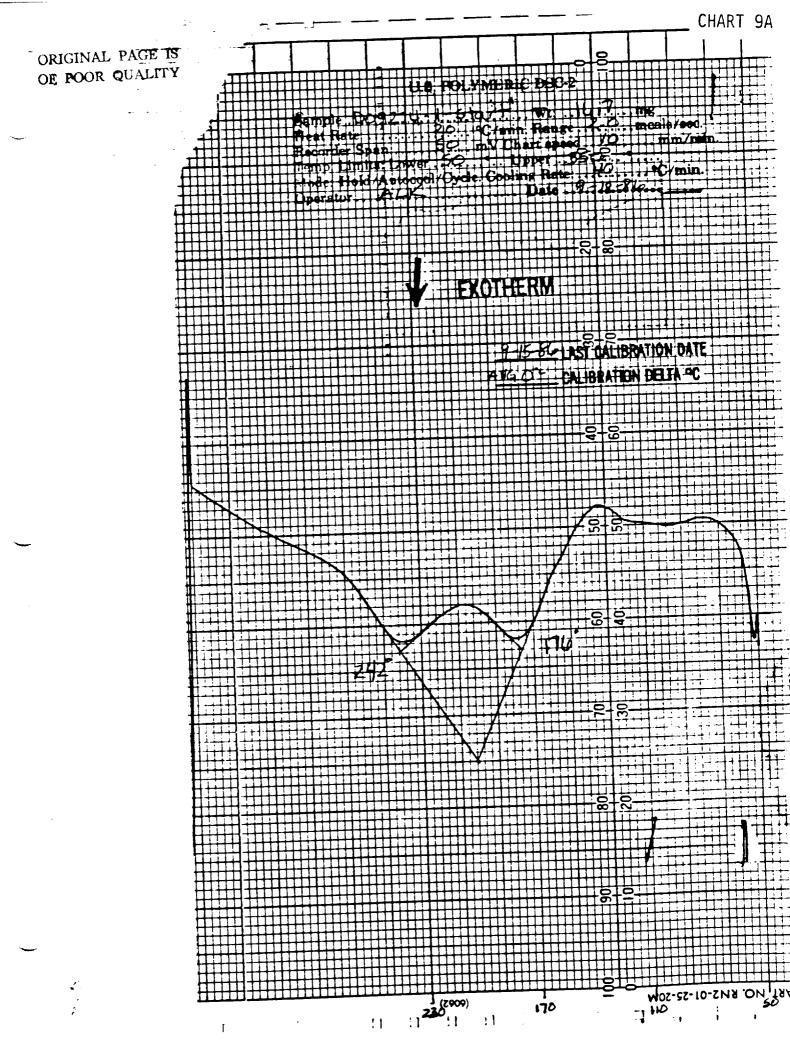
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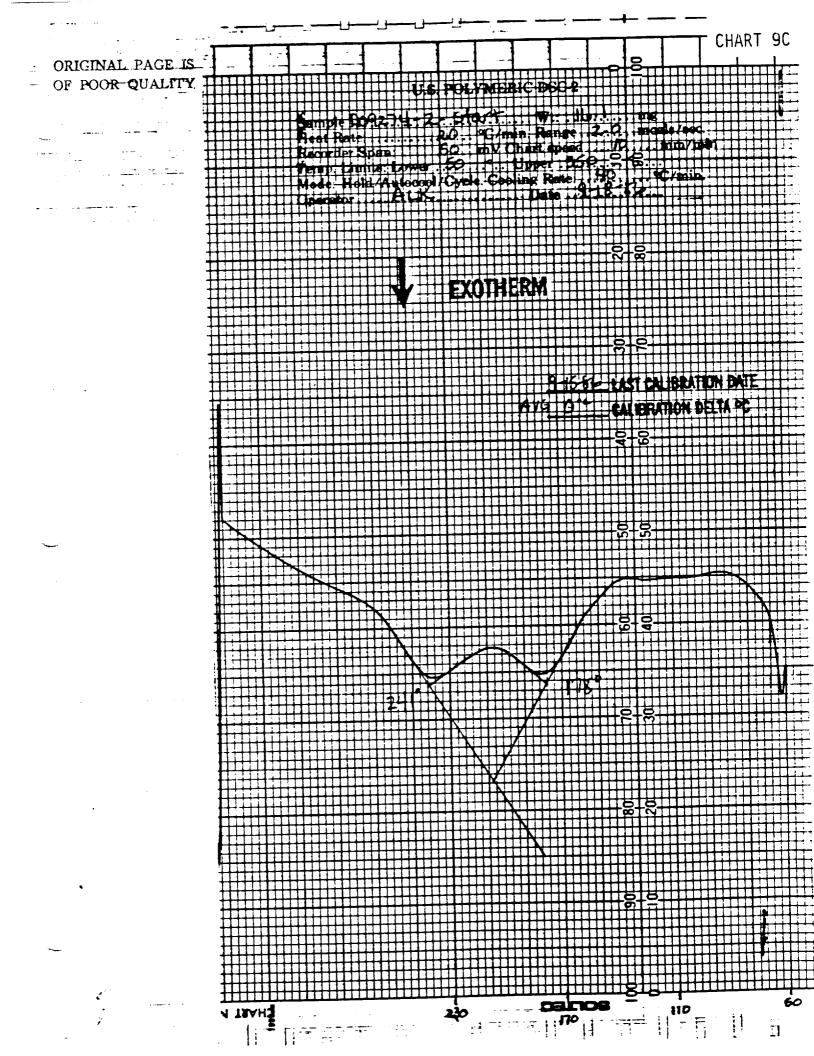
CHUIL CTAL ORIGINAL PAGE IS OF POOR QUALITY TMA (u. /. F) SCALE, mile/in\_0/6.2 dY.(10X).(mile/min)/in\_ SAMPLE SIZE 0. 147 MODE CACALLA LOAD. 9\_\_\_ SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY. (mg/min) /in-(mcel/sec)/in. WEIGHT, mg-SCALE, "C/in. DTA-DSC SCALE, "C/in 36/21 HEAT\_COOL\_180 T.AXIS OPERATOR ASSAULE Dog 374-9-FAM (4) ATM ALL O STY PART NO. 990088

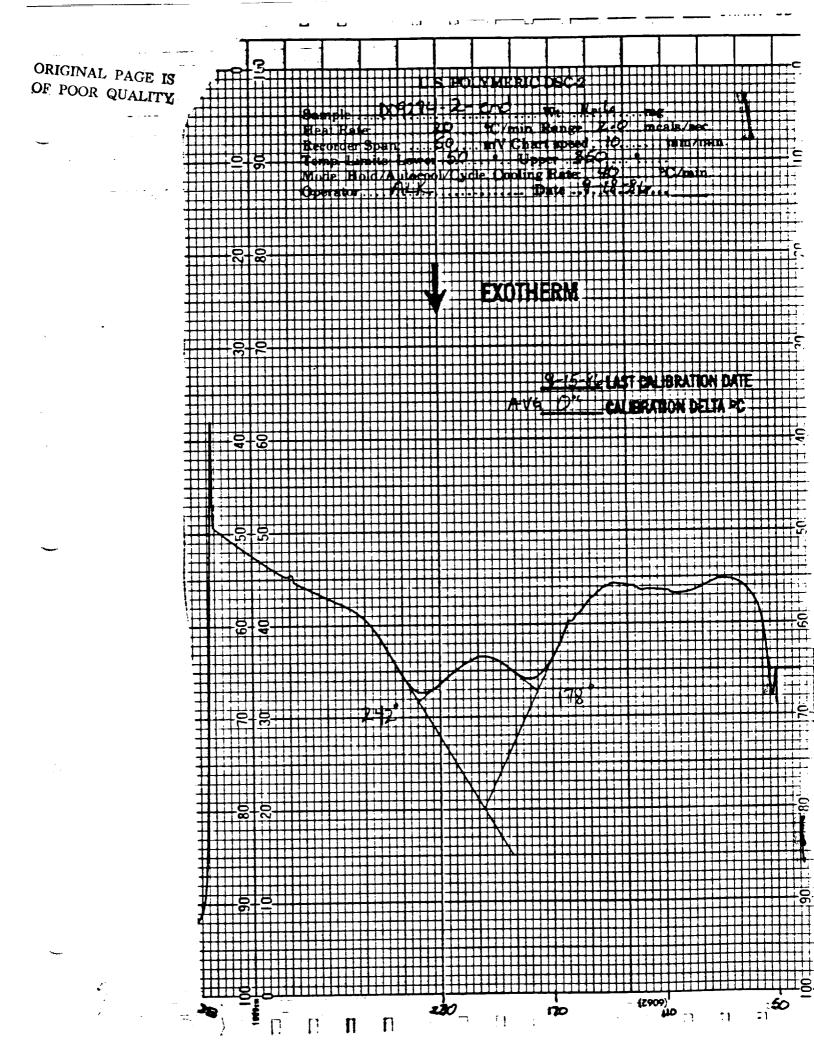
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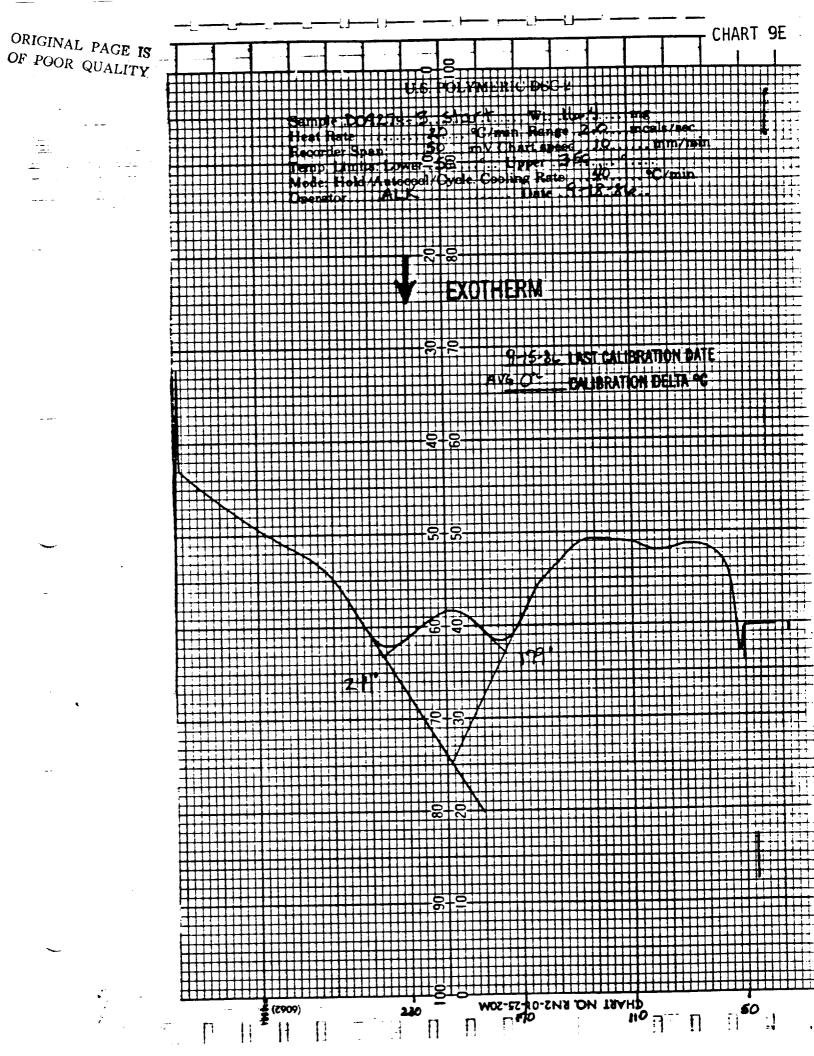
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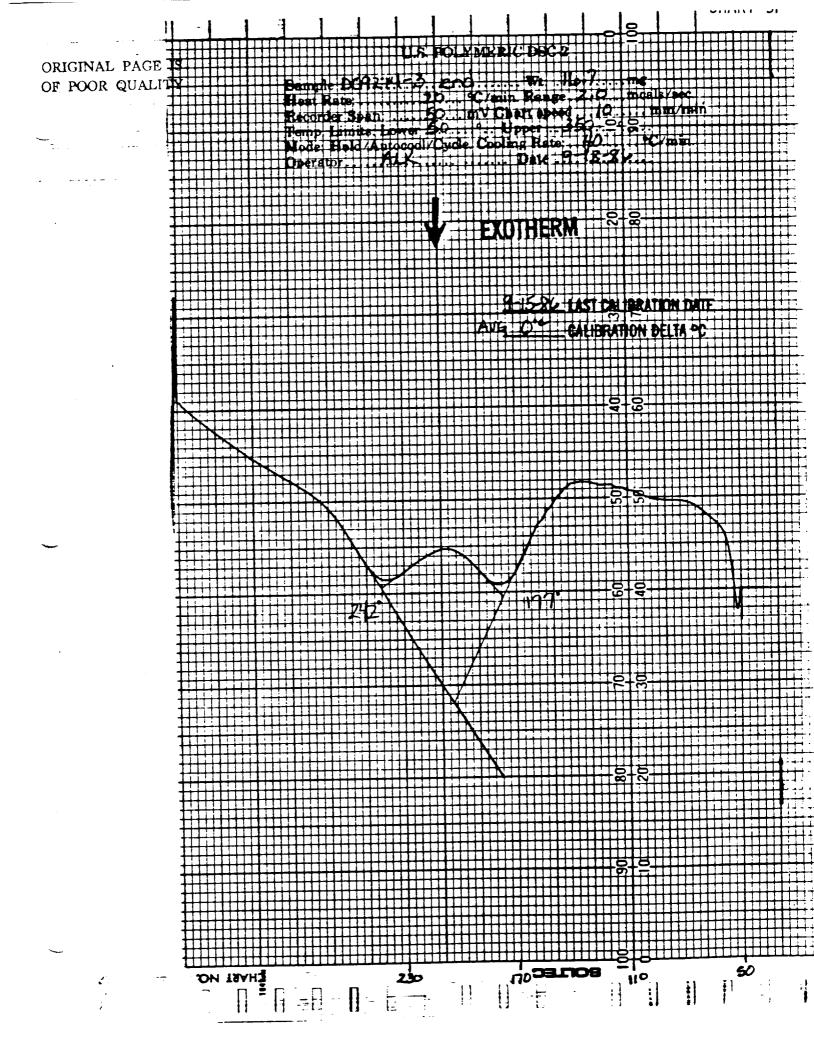
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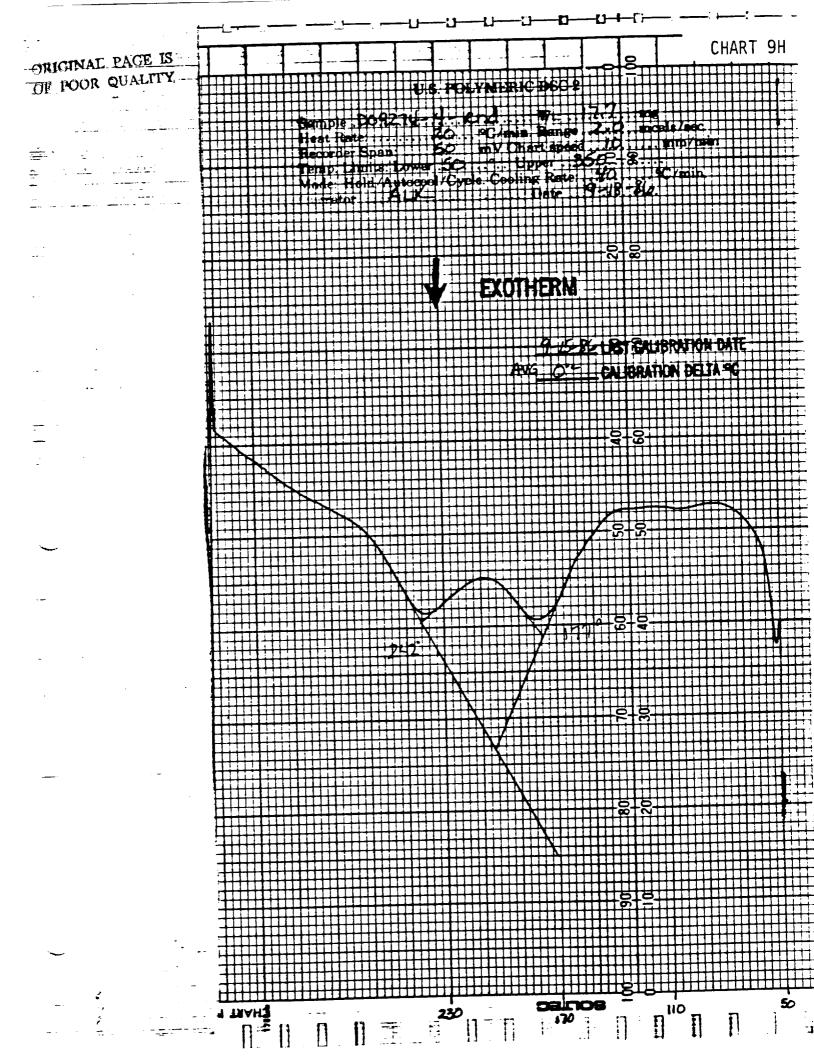


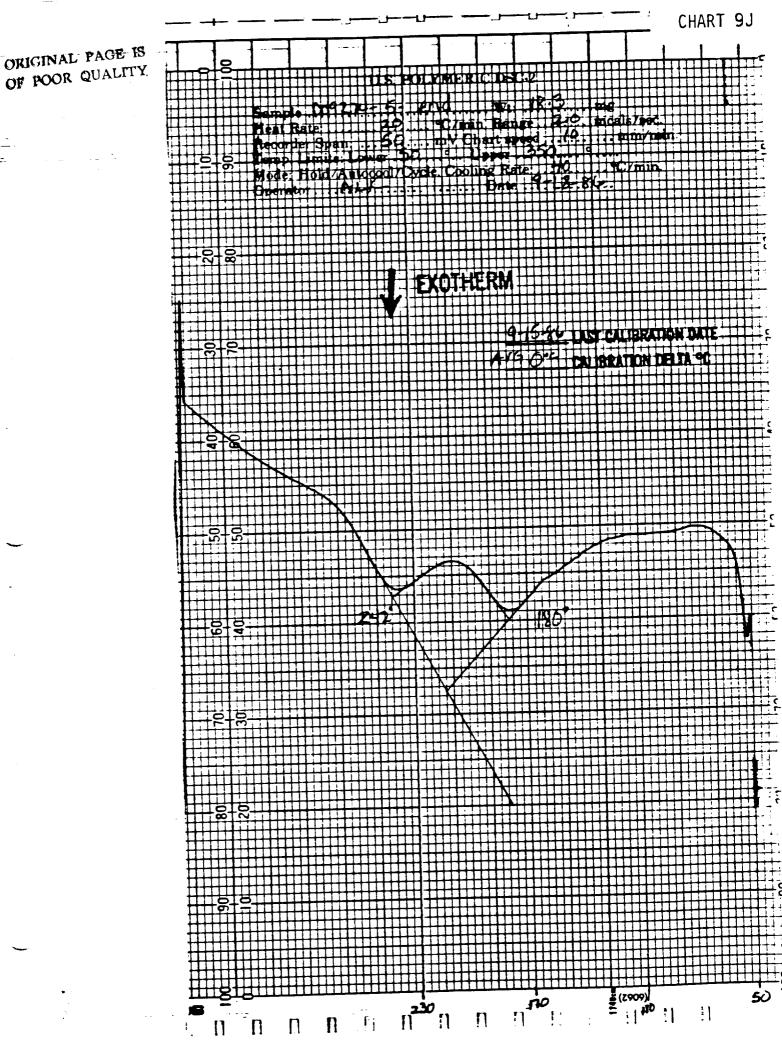


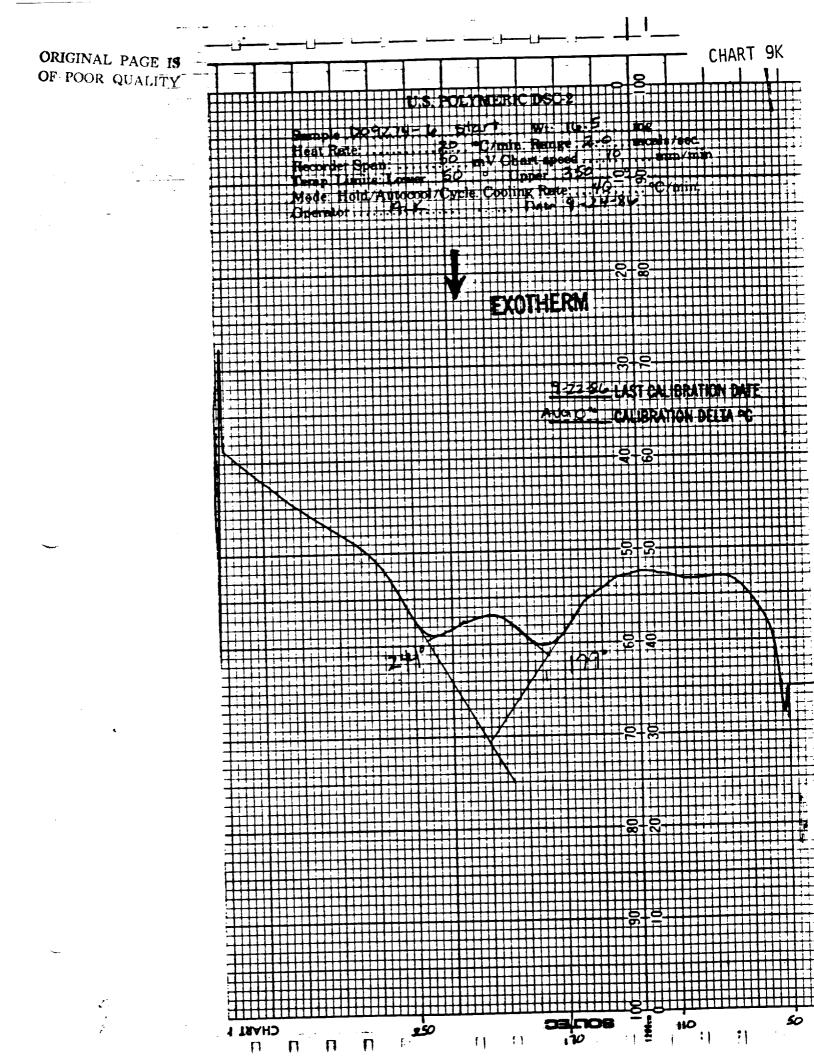












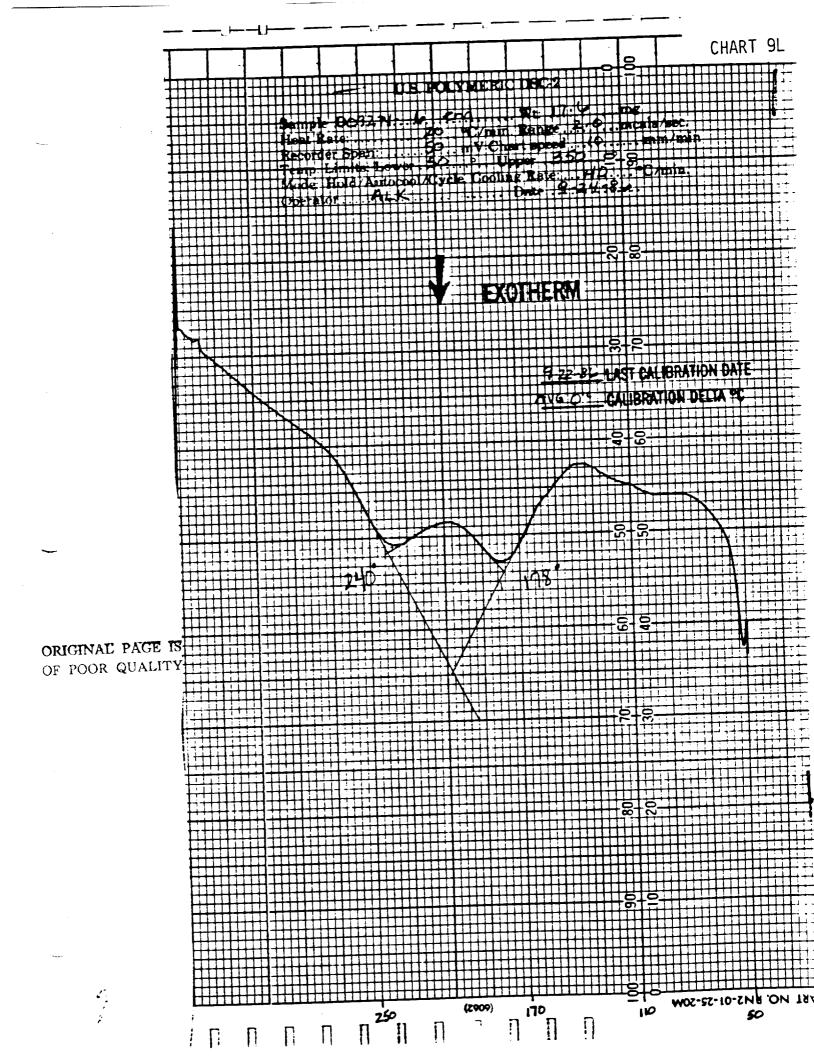


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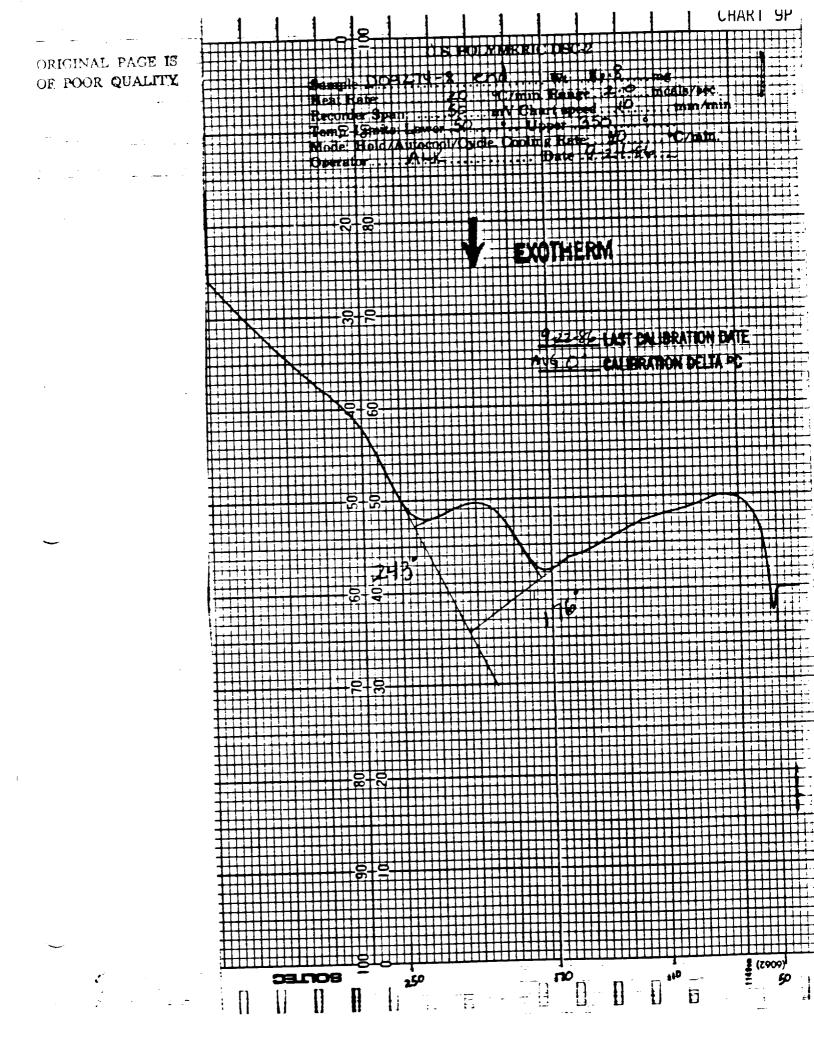
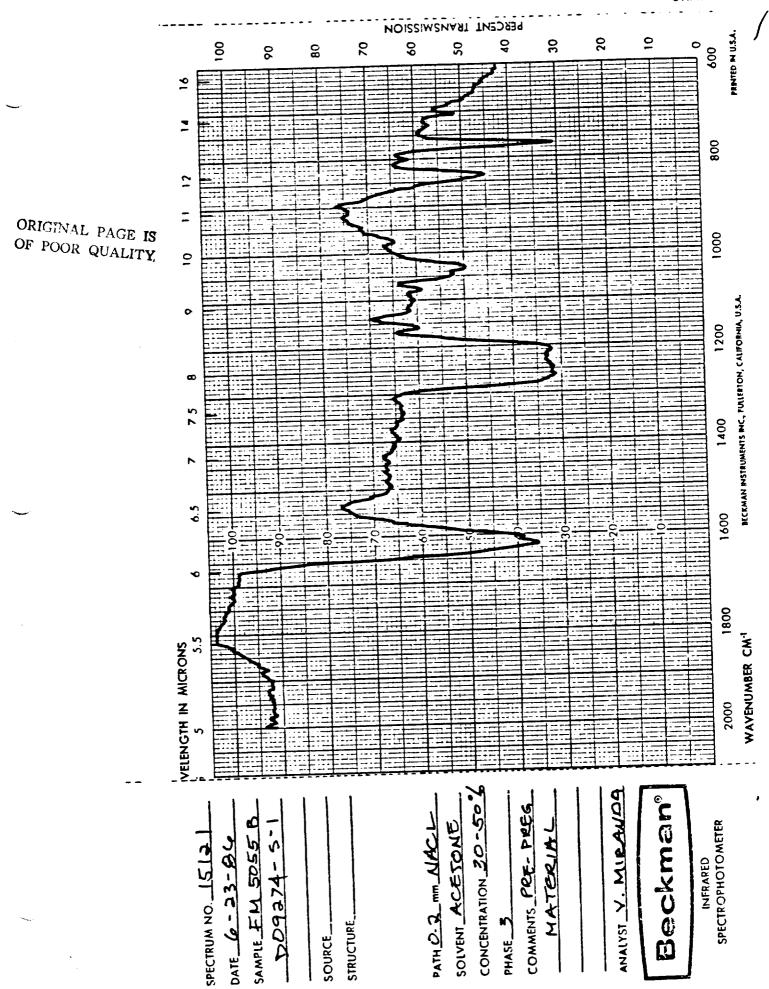
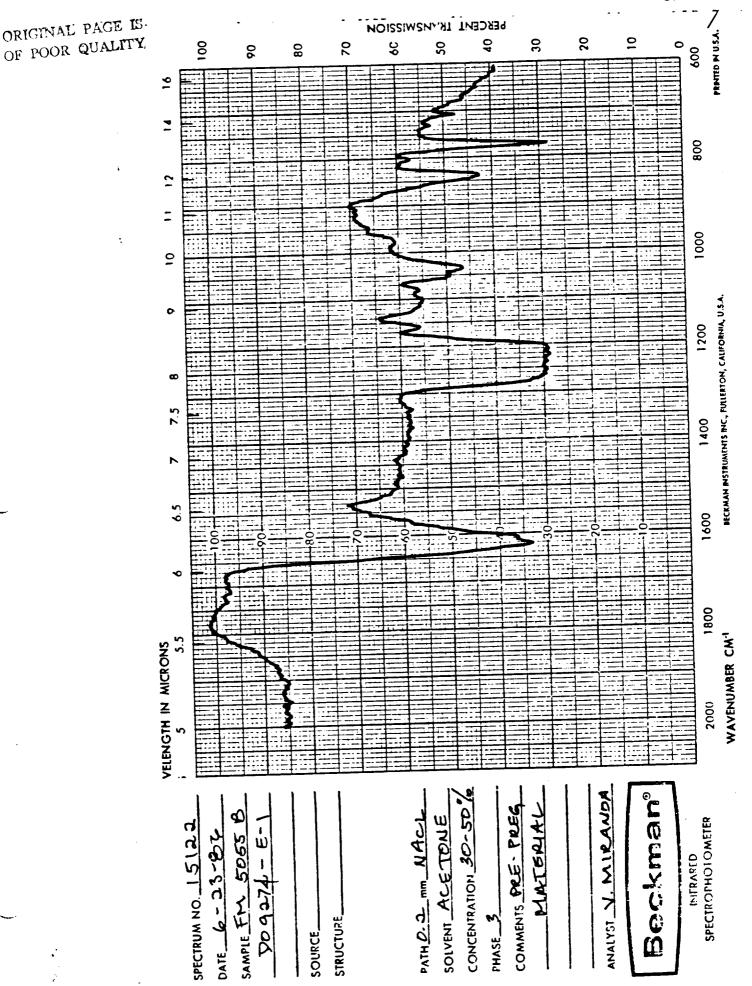
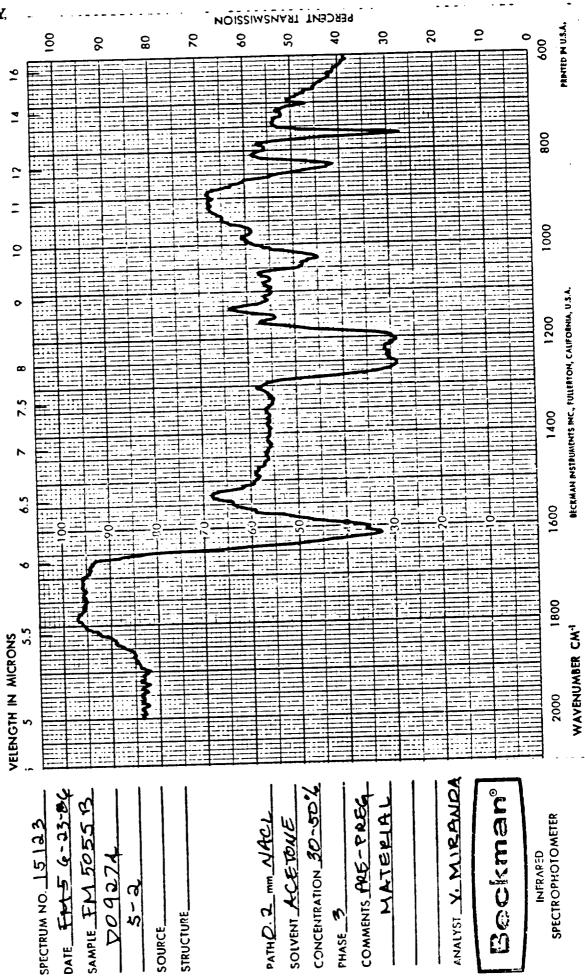
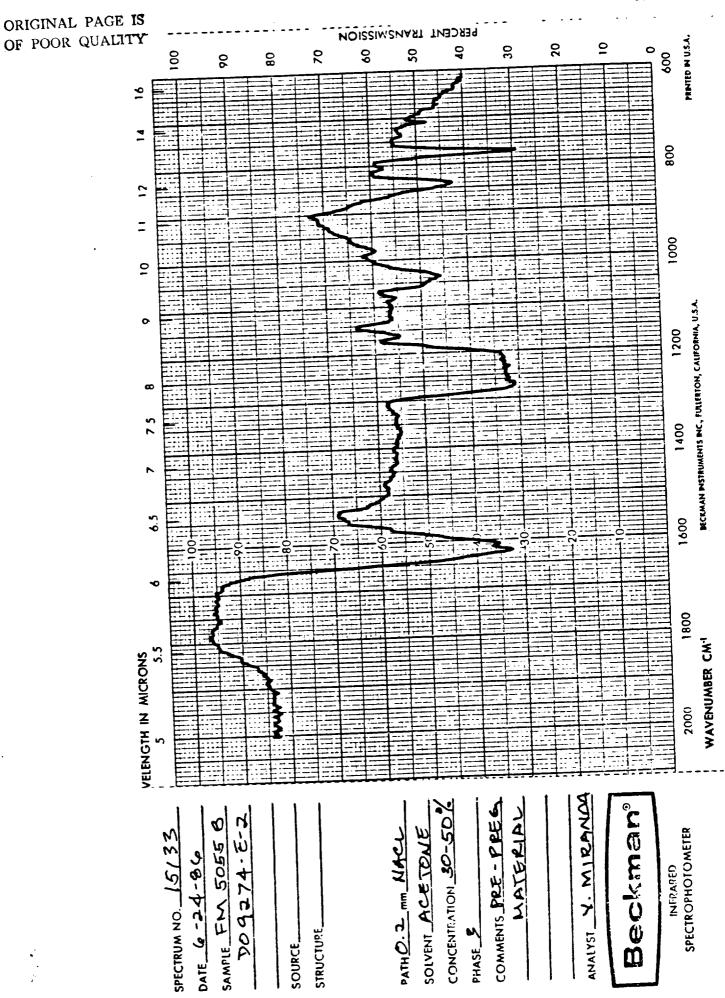


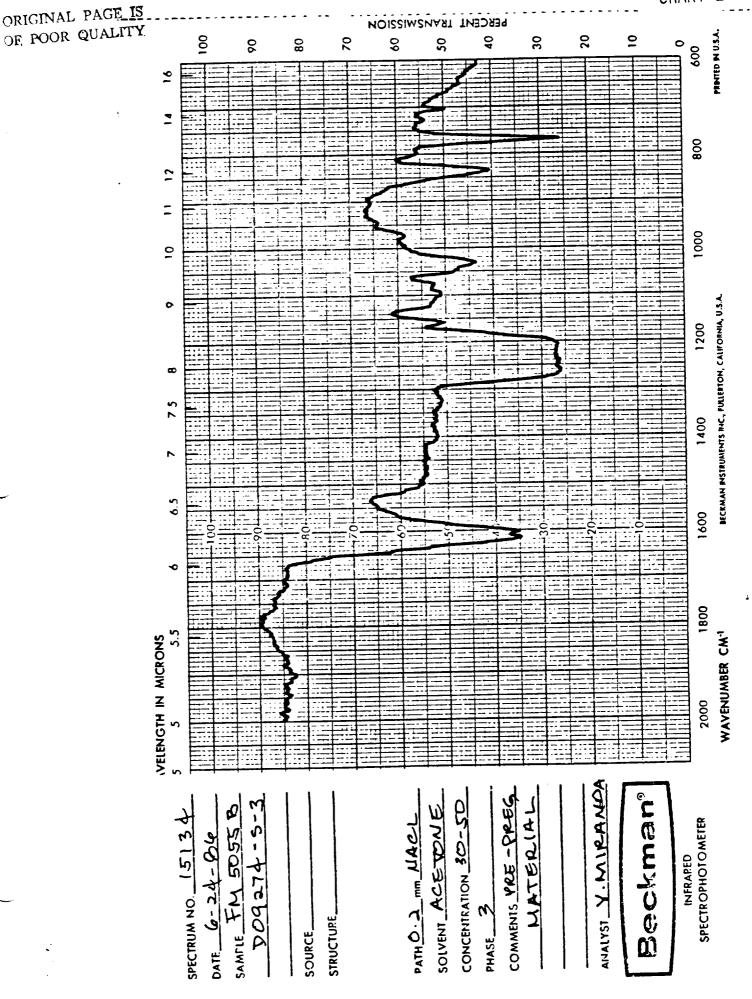
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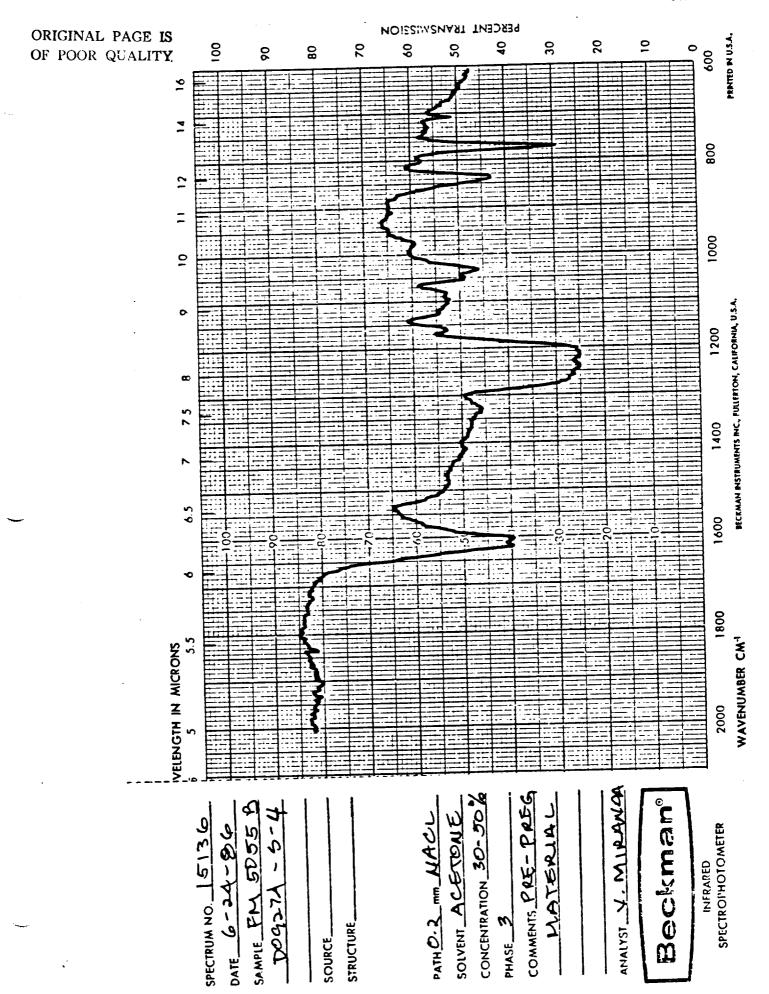


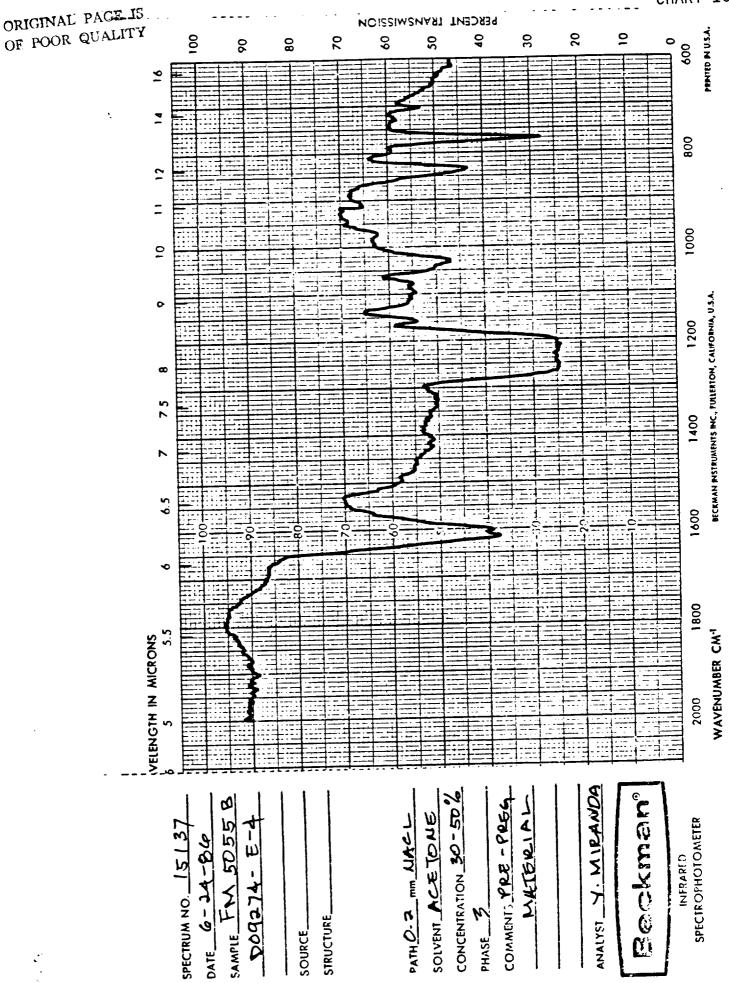


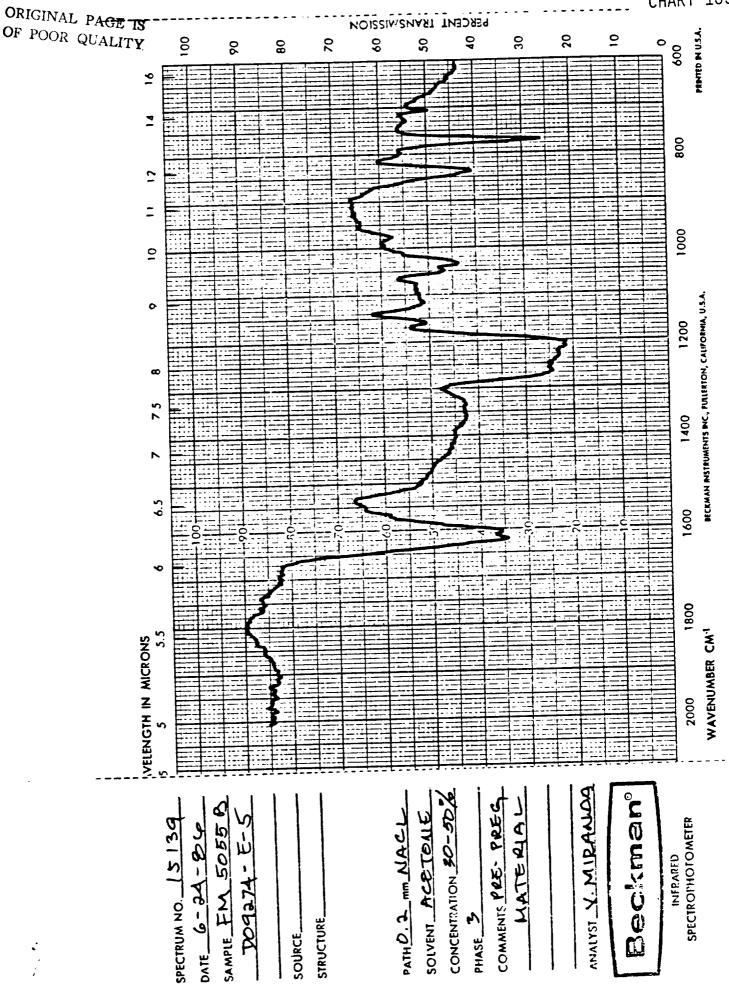


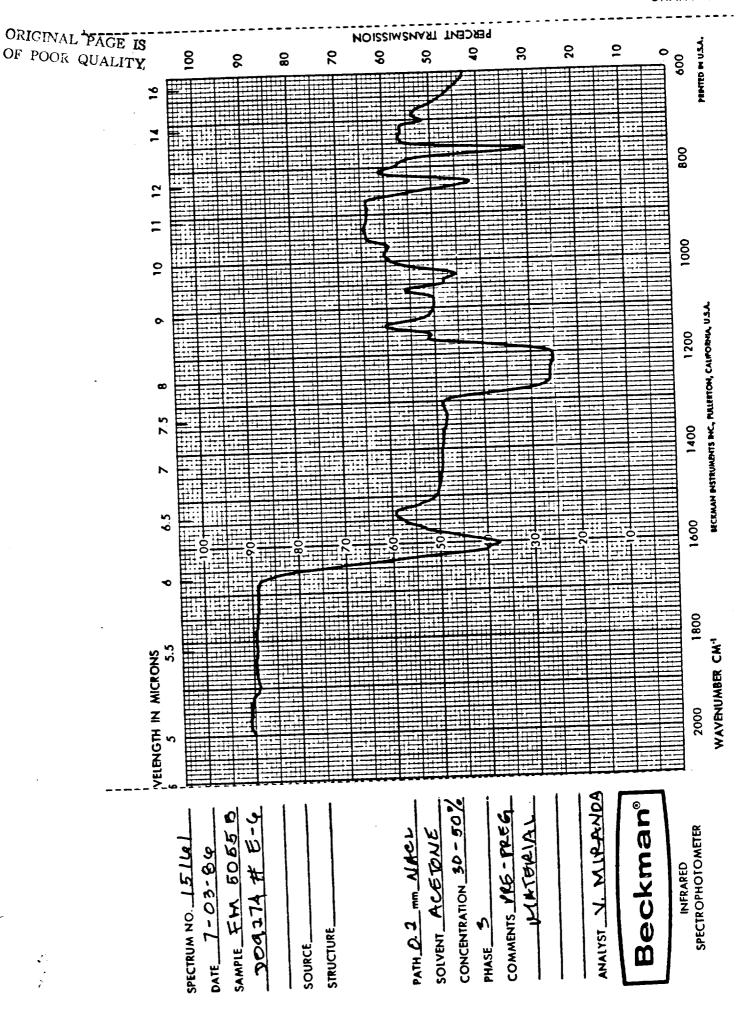












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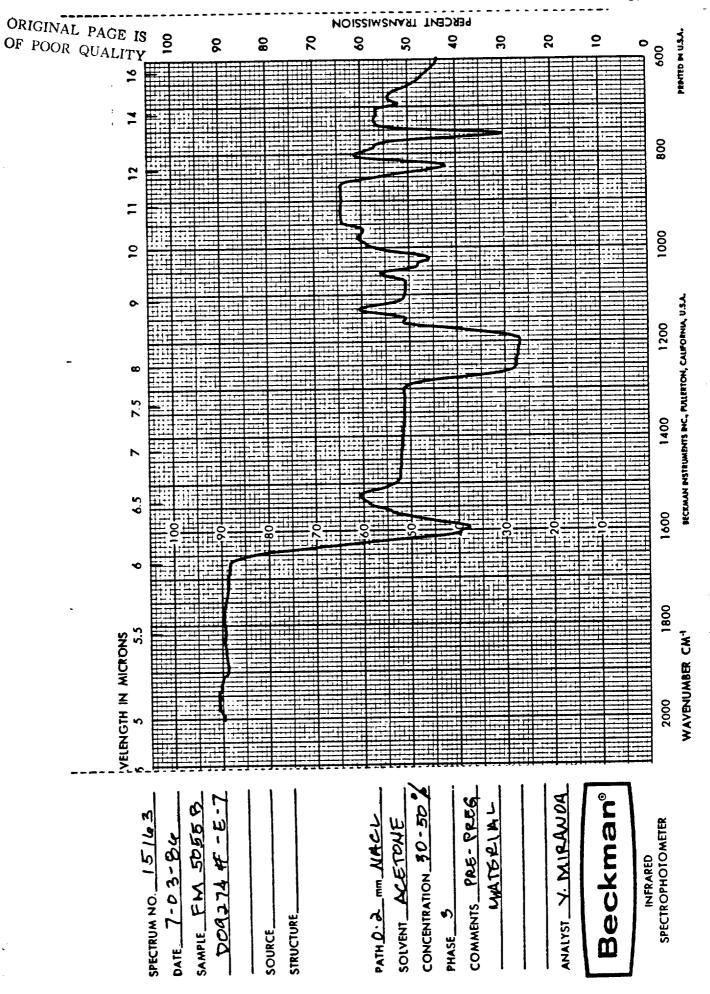
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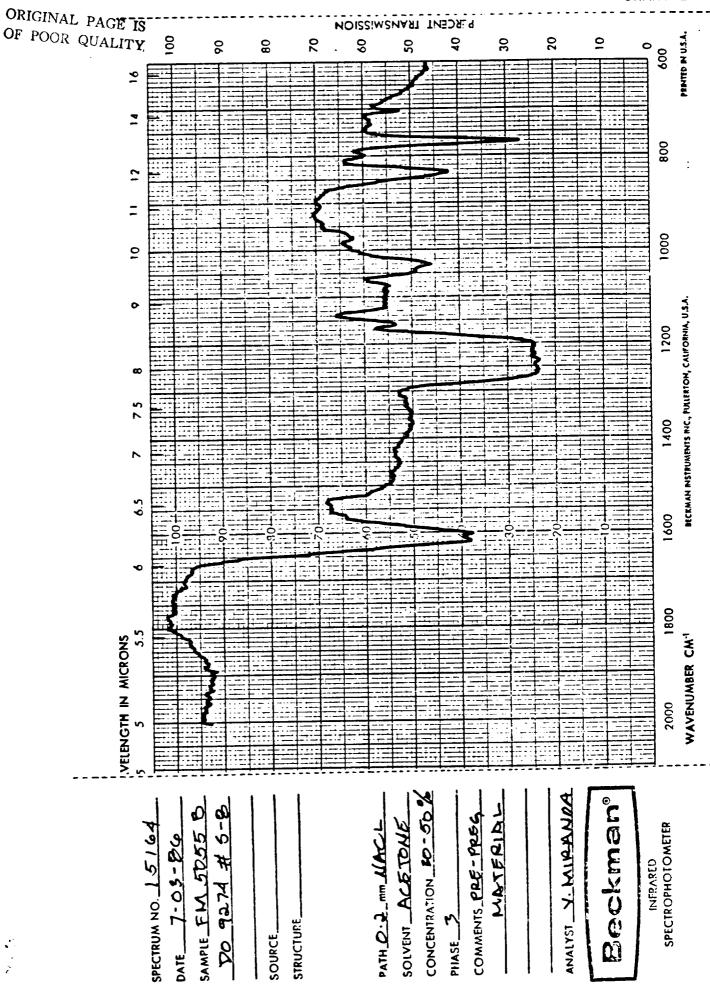
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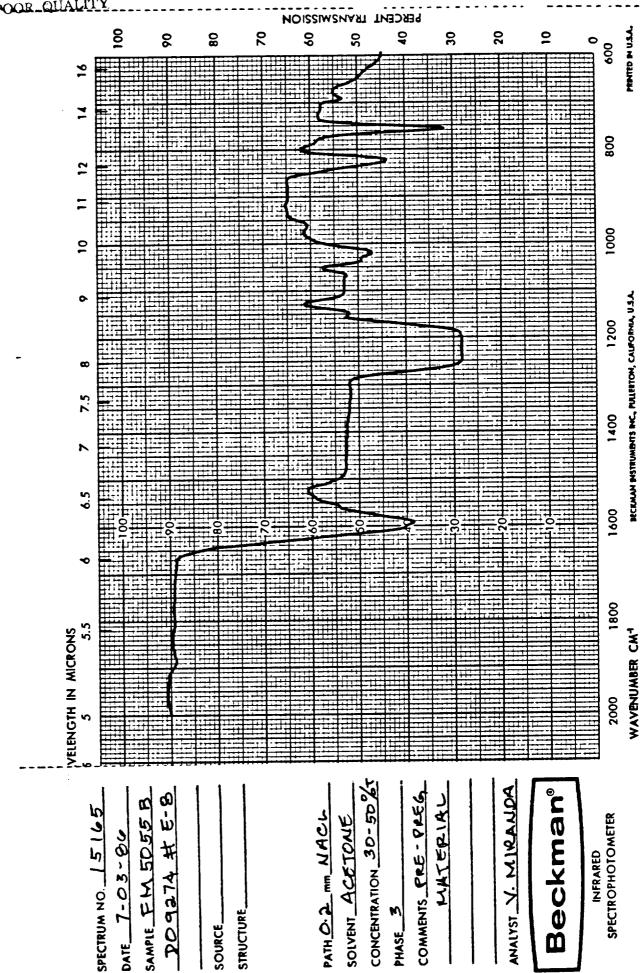
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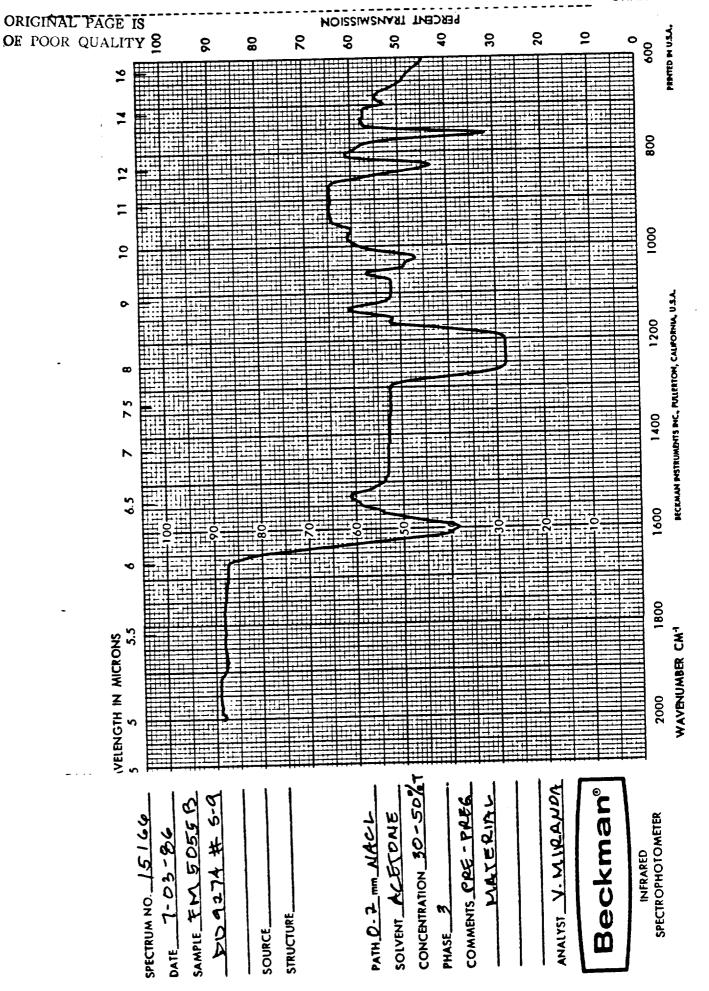
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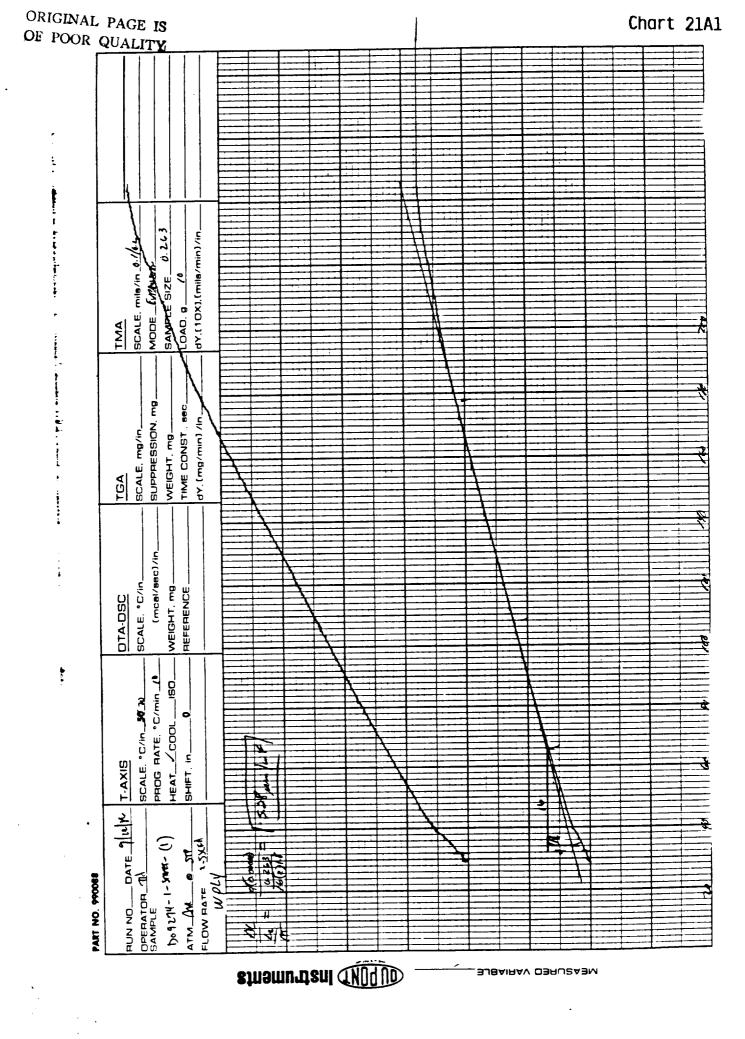
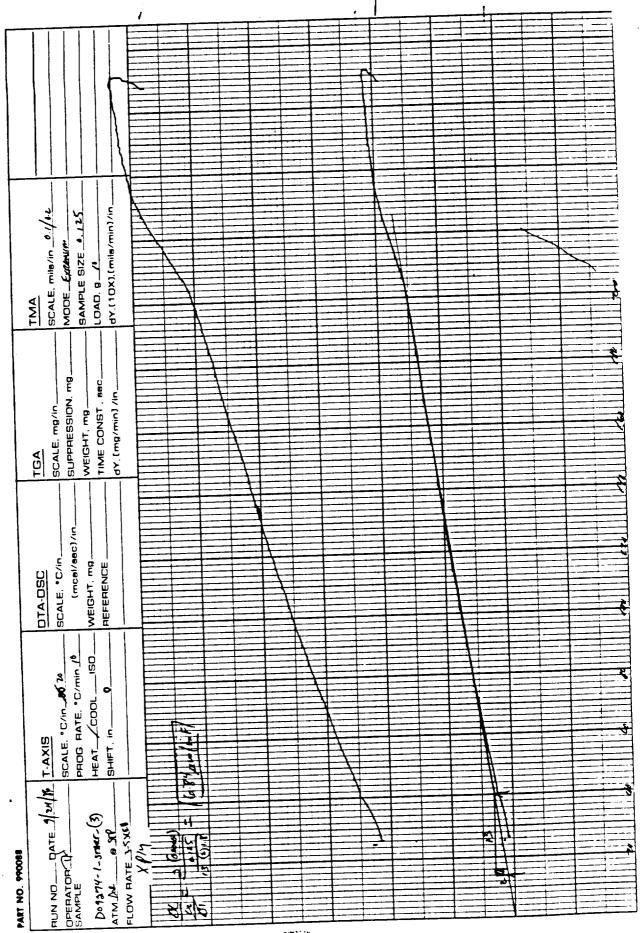


Chart 21A2 ORIGINAL PAGE IS OF POOR QUALITY dY.(10X),(mile/min/in\_ SCALE, mile/in 6.//1.1 SAMPLE SIZE 0.255 MODE EXTRAST LOAD, 9... SUPPRESSION, mg. TIME CONST. 880 dY. (mg/min) /in\_ SCALE, mg/ln. WEIGHT, mg. (mcel/sec)/in. WEIGHT, mg-SCALE. "C/in. DTA-DSC SCALE, "C/in % " HEAT\_\_COOL\_\_ISO. SHIFT, In. T-AXIS RUN NO DATE 12416 SAMPLE (7)-2004-1-1126 OC ATM AM BATE 1-CYPH PART NO. 990088 308 stnamurtani (NOG UD) BJBAIRAV DBRUSABM



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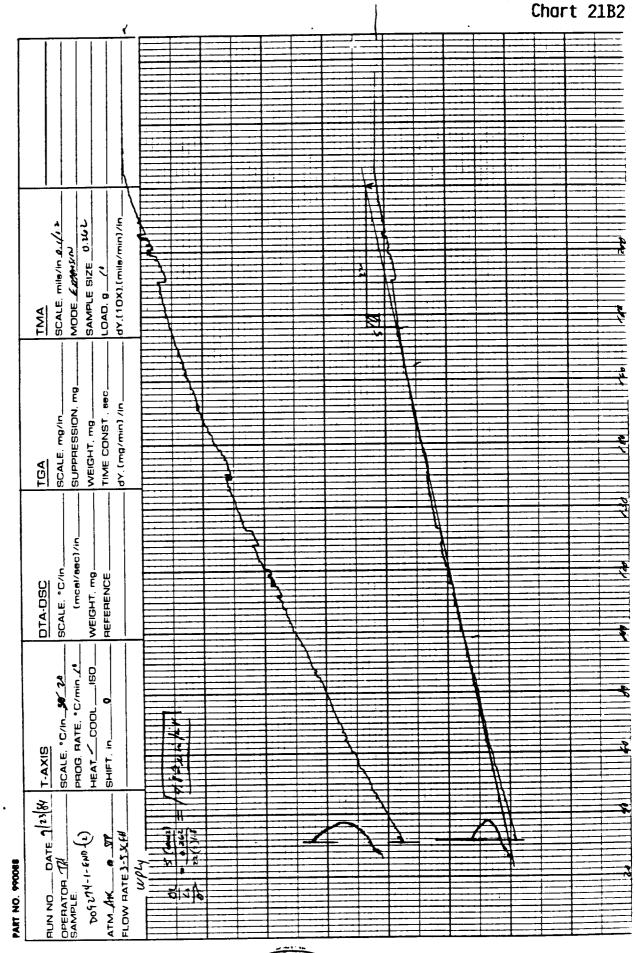
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PART NO. 990068		-		
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Chart 21B1 dY.(10X).[mile/min]/in\_ SPACE mile/in 6./61 SAMPLE SIZE 0.162 MODE - ENTHUM LOAD, 9 7 TMA SUPPRESSION, mg. WEIGHT, MB dy. (mportain) /in\_\_ SCALE, mg/in. (mcal/sec)/in. WEIGHT, mg-SCALE, "C/in. DTA-DSC SCALE. "C/in 30 2 HEAT COOL 150-T-AXIS OPERATOR () SAMPLE DO9374-1-ENO(1) FLOW RATE 1-1994 PART NO. 990068

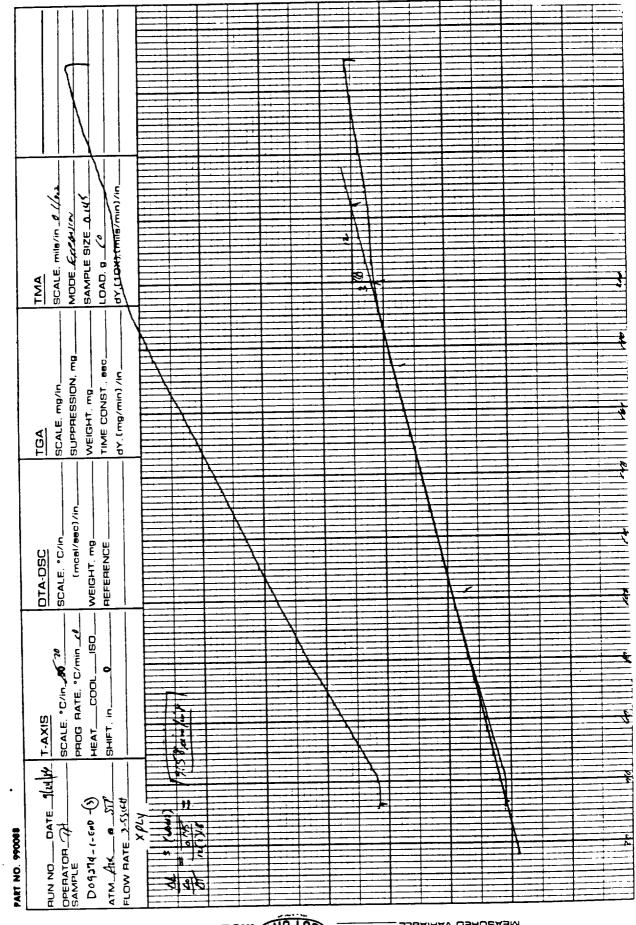
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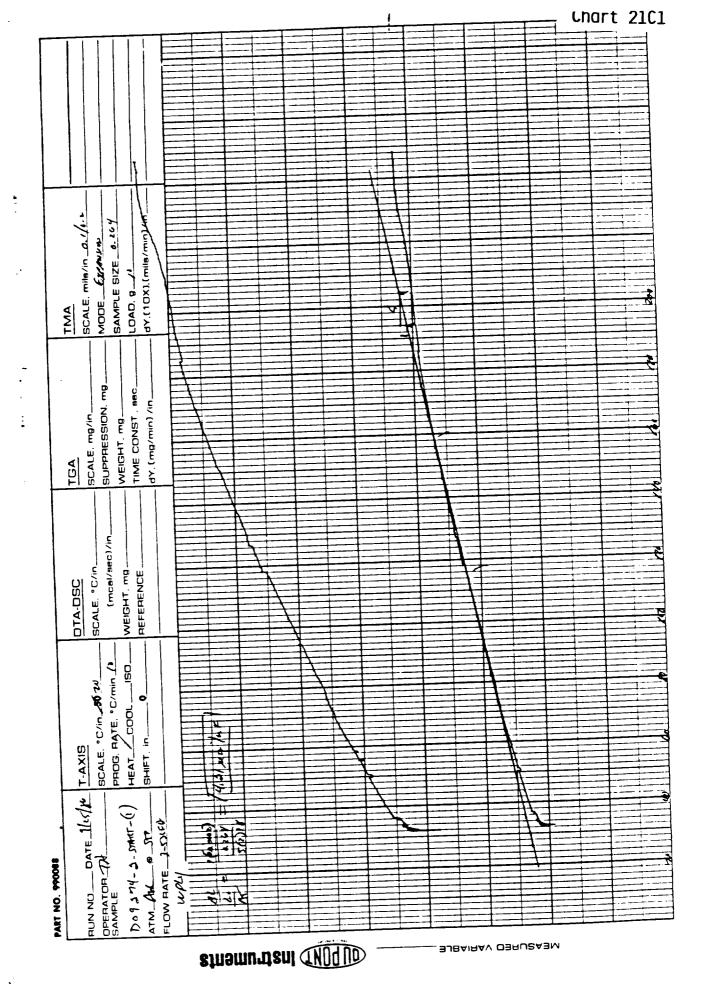
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Chart 21B4 SCALE, mile/in\_0./1.2 dY,(10X).(mils/min)/in\_ SAMPLE SYZE 0.145 MODE ERMINA 1.00 g TMA SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY. (mg/min) /in\_ SCALE, mg/ln, TGA WEIGHT MG-SCALE. "C/in. DTA-DSC SCALE, "C/in 10 20 HEAT COOL ISO. SHIFT, in\_ T-AXIS RUN NO DATE 4 14 1/1 OPERATOR 7 FLOW RATE 3-530FB 72.0 (b)-um3-1- LCELOQ PART NO. 990088 ATMAR stnamurtani (MOGUD) BJBAIRAV OBRUZABM

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Chart 21C2 br.(10x).(mils/min)/in\_ TMA SCALE, mile/in\_A/@. MODE CIEMILE SAMPLE SIZE LOAD, P. SUPPRESSION, mg WEIGHT, mg\_\_\_\_\_\_ dY, (mg/min) /in\_ WEIGHT, mg-SCALE, "C/In DTA-DSC SCALE, "C/in 30 20 PROG, BATE, "C/min 10 HEAT COOL T-AXIS RUN NO DATE SATE D09374-2-517861 (2) FLOW BATE 3-556 PART NO. 990088 etnəmurteni (M) q (D) BJBAIRAV DBRUSABM

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dY,(10X),(mila/min)/in\_ SCALE, mile/in\_0//4.4 MODE ENTHERAL LOAD, 9 74 TMA SUPPRESSION, mg. TIME CONST., 88C. dY, (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA (mcal/sec)/in. SCALE, \*C/in. WEIGHT, mg. HEFERENCE DTA-DSC PHOG HATE. "C/min 10 HEAT COOL ISO. SCALE . C/in . 10 20 SHIFT, in... T-AXIS OPERATOR PL (3)-2-2-2-2000 (3) ATM AN BATE 3-53004 PART NO. 990088 হাও stnamurteni (MOGUD) ALBAIRAV OBRURABNE

**Chart 21C3** 

dY,(10X),(mile/min)/in. SAMPLE SIZE O 14 1 MODE ERMISON LOAD. 9 ... AM⊥ SUPPRESSION. mg. TIME CONST. 86C. dy emg/min) /In\_ SCALE, mg/in\_ WEIGHT, mg TGA WEIGHT, mg\_ REFERENCE\_ SCALE, "C/in. DTA-DSC SHIFT, in... T-AXIS RUN NO DATE 1/24/14 DO1274-2-STONG-(4) ATM AN BATE 3. SEL PART NO. 990088

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SCALE, mile/in\_du//6.1-LOAD, 9 // dY,(10X),(mils/min)/jrr SAMPLE SIZE 0,263 MODE CAZA-SIN TMA SUPPRESSION, mg. TIME CONST, 880. dY, (mg/min) /in\_ SCALE, mg/in. WEIGHT, mg. TGA (mcel/sec)/in WEIGHT, mg\_ SCALE. "C/in. DTA-DSC SCALE, C/in 36.76 PROG, BATE, C/min 10 HEAT COOL 150. SHIFT, in. T-AXIS HUN NO DATE 9/21/16 FLOW HATE 3-55(EP (1)-03-6-46-60Q ATM CHE BY OPERATOR OR + PART NO. 990068 stnamurtani (NOGUD) BJBAIRAV OBRUZABM

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Chart 21D2 LOAD, g\_/o dY.(10X).(mile/min)/in-SAMPLE SIZE 0 266 TMA SCALE, mg/in\_\_\_\_\_\_ dy, (mg/min) /in. WEIGHT, Mg\_ TGA (mcal/88c)/in. SCALE, "C/in. WEIGHT, mg. REFERENCE. DTA-DSC SCALE, "C/In 30 70 PROG, RATE, "C/min /8 HEAT\_\_COOL\_\_\_ISO. OPERATOR THE SAMPLE: (1) 03-8-476 POL ATM LAK BYEN PART NO. 990088 BJBAIRAV OBRUZABM stnamurtant (NOGDD)

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Chart 21D3

dY.(10X).(mils/min)/in\_ SCALE mile/in . 16.4 SAMPLE SIZE 0.14 MODE KINEMICA LOAD, 9 **TMA** WEIGHT, mg TIME CONST. ego. SUPPRESSION, mg. SCALE, mg/in. TGA WEIGHT, mg-SCALE, "C/in, DTA-DSC SCALE, "C/in \$6'20 PROG RATE, "C/min 4 HEAT COOL ISO. SHIFT, In\_ T-AXIS HUN NO DATE STATE FLOW RATE 3.556 001174-2-EM-(3) ATM AM . O ST PART NO. 990088 stnamurtani (MOQU) BJBAIRAV OBRUZABM

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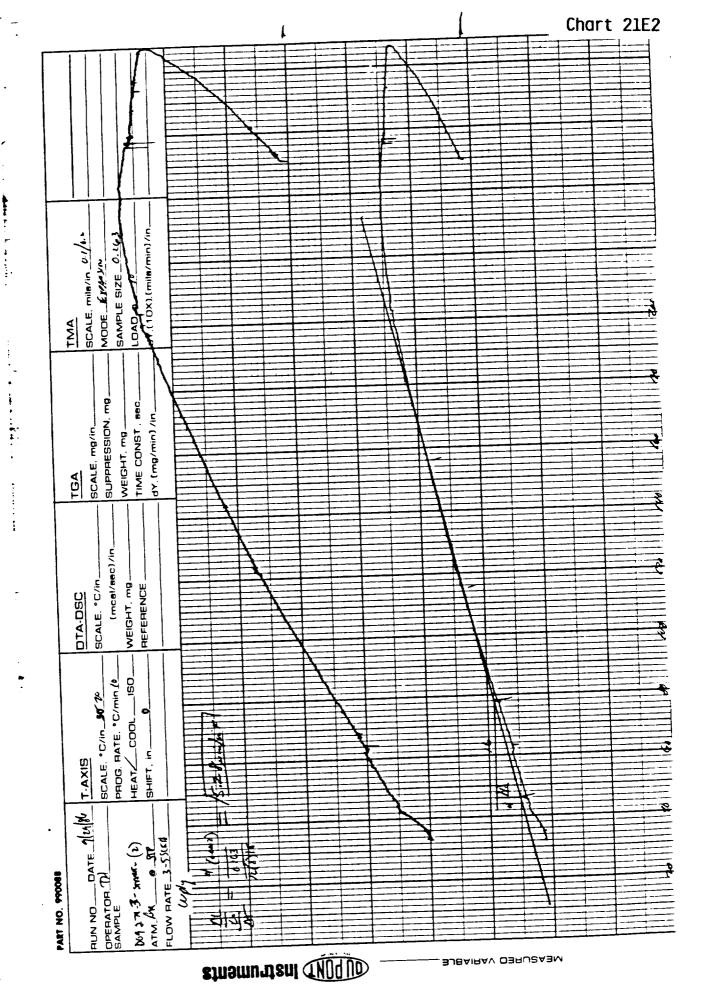
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Chart 21E1 dY.(10X)((mile/min)/in\_ SCALE, mile/in 2.1/12 SAMPLE SIZE 0.16 MODE GALPHUR LOAD, 9-**TMA** SUPPRESSION, mg. TIME CONST. 88C. dY. (mg/min) /in\_ SCALE, mg/in. **WEIGHT**, mg. (mcal/sec)/in. DTA-DSC SCALE, \*C/in\_ WEIGHT, mg-PROG RATE, "C/min 16 HEAT COOL ISO. SCALE, "C/in \$6 24 SHIFT, In. T-AXIS HUN NO DATE 1/21/16 OPERATOR THE SAMPLE Doford - 3 - spart - () FLOW RATE 25 KML ATM AM O STP PART NO. 990088 SJBAIRAV OSRUZASM

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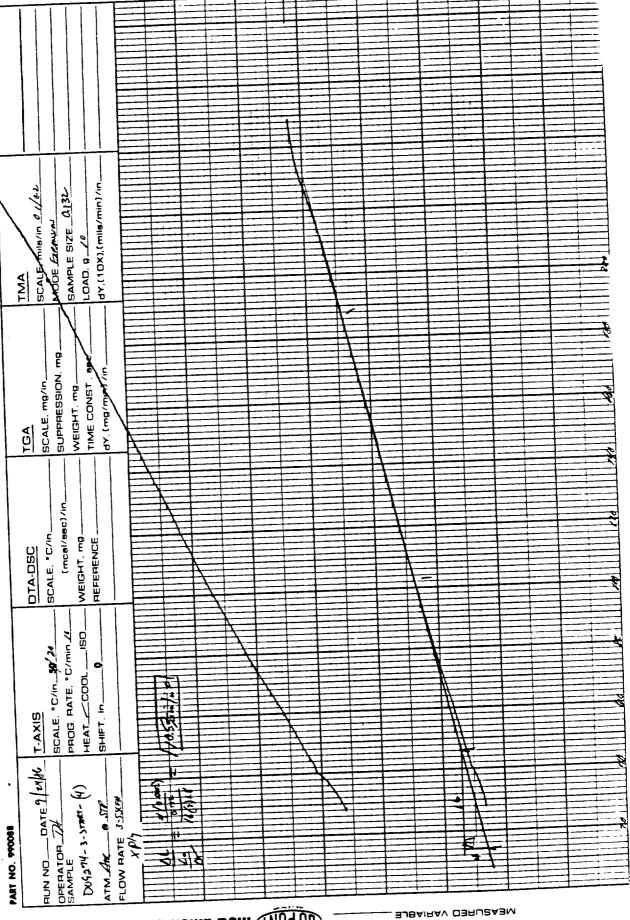
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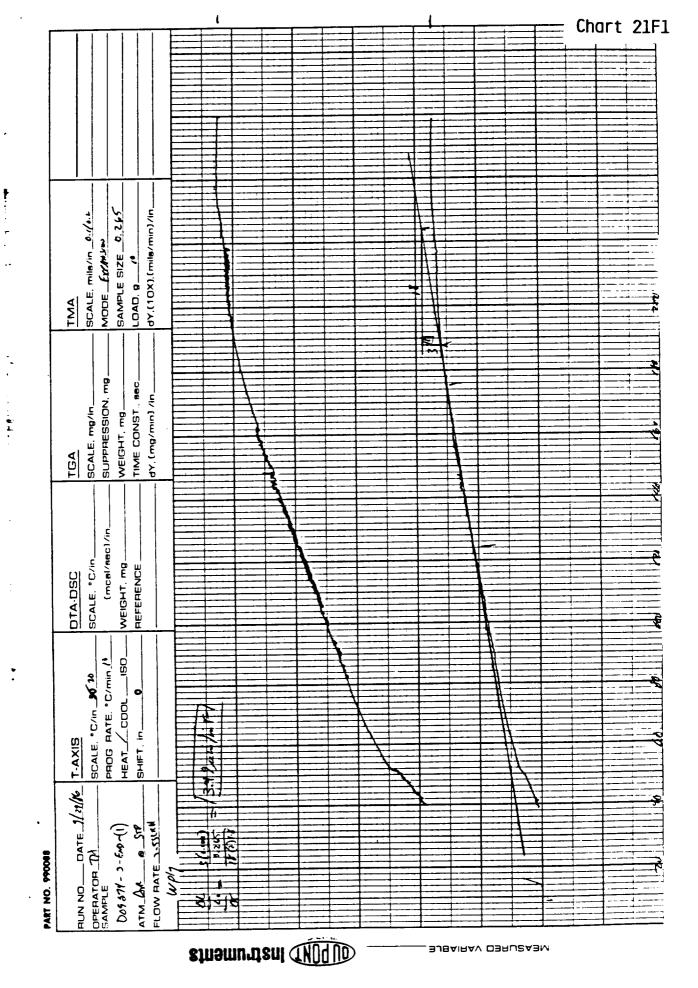
1 - -Chart 21E3 | SAMPLE SIZE 0.133 | LOAD, 9 | Mail of the same of th TMA SUPPRESSION, mg. WEIGHT Mg SCALE, mg/ln. dY, [mg/min] TGA (mcal/sec)/in. WEIGHT, mg... REFERENCE... SCALE, "C/in DTA-DSC SCALE, "C/in 10 20 PROG. RATE. "C/min 14. HEAT COOL \_\_ISO. SHIFT, in. PUN NO DATE 3 W 14 T.AXIS
OPERATOR CALE. " ATM ANC & STT DO 9274- 3- STANT (3) PART NO. 990088 হাগ্ৰহ stnamurtani (MOQUD) BJBAIRAV DBRUSABM

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Chart 21F2 dY.(10X).(mile/min)/in. SCALE, mile/in 6.1/6.1 SAMPLE SIZE 0.W MODE CACCOMSIN LOAD, 9\_\_\_\_ SUPPRESSION, mg. WEIGHT, mg\_\_\_\_\_ dY, (mg/min) /in\_ SCALE, mg/in. TGA (mcal/sec)/in. WEIGHT, mg. SCALE. "C/in DTA-DSC HEAT COOL ISO. PROG RATE, "C/min !! SCALE, "C/in 36 20 SHIFT, In\_ OPERATOR DATE 1/1/1/1/ SAMPLE DO9 274-3- END (2) ATM ANT @ JTT PART NO. 990088

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